

cole of

AD A O 42624

**UNCLASSIFIED** 



HIDE REVISED WAVELENGTH RESOLUTION EMISSION AND TRANSMISSION MODEL

Data Item A007 Interim Technical Report

Prepared for

U.S. Army Aviation Material Command AMCPM-AESWPS

Box 209, Main Station St. Louis, Mo. 63166 DE PRINTER DE LA PRINTER DE LA

Under Contract DAAJ61-72-C-0447 (P32)

By

Westinghouse Defense and Electronic Systems Center Baltimore, Maryland



**UNCLASSIFIED** 

AD NO.

6)

HIDE REVISED WAVELENGTH RESOLUTION EMISSION AND TRANSMISSION MODEL

Data Item A007 Interim Mechnical Report

Prepared for

U.S. Army Aviation Material Command
AMCPM-AESWPS

Box 209, Main Station St. Louis, Mo. 63166

Under Contracty DAAJ 1-72-C-0447 (P32)

Ву

Westinghouse Defense and Electronic Systems Center V Baltimore, Maryland

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

390 30



THIS PAGE INTENTIONALLY LEFT BLANK



NTIS Whate Section DOC Bull Section DOC Bull Section DOC Bull Section DOC BULLST HOATISM

BY DISTRIBUTION/AYM ART HE CORES DO BY CIAL

ACCESSION for

transmission and exhaust gas emission models to be incorporated into the HIDE (Helicopter infrared

detection estimate) computer, Foreword

AThre report describes the high resulution atmosphere

The requirements for the atmospheric transmission model to be used in the HIDE computer program are that it be fast and accurate.

of suppressed aircraft. Suppressed as used here, implies masking of all hot metal, diluting the exhaust plume gasses and reducing body contrast with the background.

Thus it is not sufficient to simply concentrate on the 2-5 micron window regions for the normally predominent tail pipe continuum radiation or the 4 micron region for the selective plume radiation as seen over short to intermediate paths (less than 3 miles). Attention must be applied to the entire spectrum of interest, 4 to 16 microns, and over long paths (such as 40 air masses for a line of sight tangent to the horizon). This is because the signatures of self emitting sources are influenced by the relatively short intervening paths and generally dominate some spectral interval. The body contrast signature, however, is comprised from remote sources (i.e. sun, sky, albedo, etc.) which are transversing long atmospheric paths to illuminate the target and this signal is contrasted against a remote background (i.e. horizon, terrain, clouds, etc.) whose radiance has also been operated on by long path constituents.

The transmission model is the basic ingredient to predicting atmospheric emission, transmission and solar scattering all of which are important to determining body contrast. Hence it must be accurate over both the long and short paths.

Currently the HIDE program is used to determine the 3-D profile of aircraft signatures and detection ranges. These exercises incur numerous itterations in target aspect and range. Thus machine time becomes an important
factor in cost. Eventually, it is expected that the HIDE program will be
used in a closed loop simulation to evaluate miss distance. This would mean
near real time operation where machine time becomes a major factor. Since
the transmission model is used repeatedly in a given signature prediction
(i.e. solar transmission and scattering, clear and cloudy sky emission as a
function of zenith, line of sight path attenuation, etc.), it is essential
that it be a fast machine algorithm.

The requirements for speed and accuracy in making computer predictions on suppressed signatures were studied in depth in the Fleet Signature Study conducted for the Naval Research Laboratory contract NOnr 4991(00)(X) over the period of 1965 to 1969. The outcome of this study was a transmission algorithm of the form

$$T_{s} = EXP \left\{ - \alpha (Q_s)^3 \right\}$$

where:  $\Upsilon$  = Transmission

5 = Species of absorber

人 = Wavelength

a = Absorption coefficient

Q = Quantity of absorber

B = Absorption exponent

This function is fast, machine wise, because ther is only one power operation (B) compared to the multiple roots, squares, exponential and trigometric operations encountered in most band models. It also provides an exceptionally



good fit over a wide range of absorber quantities. This has also been demonstrated by Green and Griggs ("Infrared Transmission Through the Atmosphere" IRIS proceedings).

The coefficient, , and exponent, B, are obtained by least mean square fits to transmission data. Thus the function may be fitted to either measured or computed data or both. Hence it is versatile in adapting to the best data source at any given wavelength over any defined averaging interval.

In the Fleet Signature work, the function was fitted to the extensive band model predictions of Wyatt, Plass and Stull for  $\rm CO_2$  and  $\rm H_2O$  and to measurements of Yates and Taylor for  $\rm H_2O$  beyond 10 microns where the Wyatt etal.  $\rm H_2O$  data stopped.

The resulting predictions, although relatively coarse spectrally, being approximately 50 cm<sup>-1</sup>, provided good agreements with transmission measurements by Yates and Taylor and Street over long paths and atmospheric emission measurements by Mooler at large zenith angles. The results of the Fleet Signature Work are reported in "Fleet Signature Model" reported in IRIS proceeding May 1969.

The transmission model was carried over in total and incorporated in the HIDE model. This was of great economical benefit to the HIDE program development.

However, it became apparent in the ensuing HIDE development that the resolution 50 cm<sup>-1</sup> was too coarse to reproduce the selective plume structure accurately. Thus to remedy this, the work reported on in this volume was initiated to improve the resolution to 5 cm<sup>-1</sup>.

The exercise was strickly mechanical in that the transmission function and curve fit routine were previously developed and validated in the Fleet



Signature Study and merely reapplied to the finer resolution data of Wyatt, Plass and Stull. However, this does not mean it was not an arduous task. In fact, the tedium of resurrecting, key punching and proofing 50,000 data values proved to be horrendous.

The results of this improved resolution model are reported in latter sections of this volume. In general, the curve fits to the Wyatt etal. data exhibit an accuracy of less than one percent in most cases. Comparisons are made with all of the available measurements by General Dynamics and Yates and Taylor. For the most part, the spectral structure fits are very good and the magnitudes are on the order of 20% accuracy. This is well within the degree of uncertainty with which the composition of the measured path is known.

However, there are some obvious deficiencies in selected regions such as the slope of the 4.3 micron CO<sub>2</sub> band head and the 5 micron H<sub>2</sub>O region. Since the functional fit to the data is good in these cases, the discrepancies have to be attributed to the data base or the measured path attributes.

If the functional fit had been bad, then the algorithm would be questionable as a viable transmission model representation. But if the data base is bad, then it is a simple matter to upgrade the data base.

Upgrading the data base is simple in principle, but is in fact, an arduous task when 5 cm<sup>-1</sup> resolution is involved. Thus it would not be attempted on a grand scale without the greatest confidence that the new data base was in fact better than the old.

Since the evolution of the implementation of this algorithm from the Fleet Signature Study through the current HIDE development, much work has been done by others in developing and discrediting transmission models and



measurements. The most publicized of these is the Cambridge Model and a movement is under way to make this the standard transmission model to be used in all radiometric calculations, whatever the form.

This movement is motivated by a desire to standardize transmission models to have a common denominator to compare system performance against. Also, because of the official endorsement of the Cambridge model, it is assumed that it is the most accurate.

These are noble reasons but not necessarily germane to HIDE. The HIDE program is not concerned with relative performance of different systems as much as the absolute performance of specific systems. The transmision model used must be real world accurate and not just academically accurate.

It is no big deal to incorporate the Cambridge or any other model into the HIDE program either in total or via the curve fit function. But it does take time and cost money to implement, and the question unanswered is whether or not it will result in more accurate predictions and if so, will the increased accuracy justify the impact on machine requirements for storage and running time as well as the time delay before exercising the HIDE model to meet current Army needs.

These decisions cannot be made without an in depth validation and comparison of the Cambridge model with the existing HIDE model. This by itself takes time and money to perform.

Thus until a valid case is made and funds provided, the HIDE model will use the previously developed and proven Fleet Signature transmission algorithm with the Wyatt etal. data base which will be periodically upgraded at selected intervals where better agreement can be achieved.

vii



The work described here shows the degree to which this model fits many measurement data sets. It would be desirable to see comparisons this extensive made with other model candidates. If the Cambridge model is as good as its endorsements, then it would be in the Army's best interest to perform such comparisons with it.

viii



Table of Contents	
	Page
1.0 Introduction	1-1
2.0 Transmission Model	2-1
3.0 Emission Model	3-1
4.0 Bibliography	4-1
Appendix A Atmospheric Transmission Sources	A-1
Appendix B H <sub>2</sub> O and CO <sub>2</sub> Transmission Data as used in the "Hide" Program	B-1
Appendix C Atmospheric Validation (General Dynamics)	C-1
Appendix D Yates and Taylor Validation Data	D-1
Appendix E Hot Water Vapor Emission Data for the Range 50 cm 9300 cm	E-1
Appendix F Carbon Dioxide Emission Data for the Range 3000-3770 cm	F-1
Appendix G Carbon Dioxide Emission Data for the Range 2050-2500 cm	G <b>-1</b>
Appendix H Carbon Dioxide Emission Data for the Range 500-800 cm	H-1
Appendix I Ludwig Emission Model for the CO <sub>2</sub> 1900-2395 cm Band	I-1
Appendix J Scattering Function	

ix



#### 1.0 Introduction

This report describes the high resolution atmospheric transmission and exhaust gas emission models to be incorporated into the HIDE (Helicopter Infrared Detection Estimate) computer model.

The HIDE computer model was developed for the Army Aviation System Command, AMCPM-AEWSPS under the technical direction of Steve Smith and is described in a final report titled "Evaluation of IR Countermeasures, Phase II - HIDE Model", dated Feb. 28, 1973.

The work reported here in represents an addendum to the original model where in the spectral resolution has been increased from 50 to 5 cm<sup>-1</sup>. This was necessary to obtain a more accurate prediction of the exhaust plume spectral signature.

Section 2 describes the empirical equation used to curve fit transmission data and analyzes the goodness of fit to measured data. This equation is

$$\Upsilon = \text{EXP} \left(-AQ^{B}\right)$$

where Q is the quantity of absorber and the coefficient A and exponent B are empirically derived for each wavelength from 1 to 16 microns. The form of the transmission equation allows one to fit either measured data or band model predicted data over a wide range of absorber quantities. Thus it provides a fast machine algorithm with an accuracy commensurate with the accuracy with which Q can be defined. The data used for the fits here were from the extensive band model predictions of Wyatt, Plass and Stull.

Section 3 describes the hot gas emission models now used in HIDE. In this instance the band models defined by the data source were used. The 4.3 micron CO<sub>2</sub> is attributed to Jackson and the entire H<sub>2</sub>O and

1-1



remaining CO2 bands are attributed to Ludwig.

The appendices contain the original input data, the derived coefficients used in the model and comparisons of predictions with measurements.

The exhaust gas prediction-measurement comparisons have been restricted here merely to illustrate the structural fit in order to keep this report unclassified. More detail on the plume spectral fits will be found in a separate unclassified report, titled "Error and Sensitivity Analysis" (u/c), data item 0008 of this contract.

Due to time and funding limitations, the water vapor coefficients beyond 10 microns were not included. This is because the Wyatt, Plass and Stull H<sub>2</sub>O data did not go beyong 10 microns. However, the coefficients may be derived from the measurements of Yates and Taylor using the same empirical fit technique. This was done on the original HIDE model and those coefficients are currently used with this high resolution version beyond 10 microns except possessing a 50 cm<sup>-1</sup> resolution. However, all of the available Yates and Taylor data is included in this report as is the reduction technique, hence the high resolution coefficients for water vapor beyong 10 microns may be readily derived.

An additional point to note is that an extensive computer optimization process was applied to the Yates and Taylor data (some 9 paths) in an attempt to relate attenuation due to scattering to wavelength, visual range and mixing ratio. The result was that an optimum fit could be obtained for each path but no universal optimum relation could be obtained for all paths that was any better than the original HIDE scattering function.

1-2



 $T_{scat} = EXP \frac{2.152 \times PATH \ LENGTH}{VISUAL \ RANGE \times WAVE \ LENGTH}$ 

The significance of this is that visual range in itself is not a sufficient descriptor of the particle size or distribution in the path and consequently is responsible for the major prediction errors over long paths at long wave lengths.



#### 2.0 Transmission Model

The transmission model used in the increased resolution task is basically the same as that used in earlier versions of "Hide" only additional data has been incorporated. The resolution of the new model is between 5 and 10 cm $^{-1}$  for the major gasses  ${\rm CO}_2$  &  ${\rm H}_2{\rm O}$  which compares with earlier versions whose transmissions were reported at 105 cm $^{-1}$  to 30 cm $^{-1}$ .

This data is used in a particular function described in the following sections to form a transmission over a given path for each gas. The product of these functions is defined as the atmospheric transmission

$$T = t_1 x t_2 \dots t_m$$

which in essence is the fractional part of radiation transmitted through the quantities of gas

found in the path. These gas quantities are dependent upon range, relative humidity, altitude and temperature. The algorithms for obtaining them will not be given in this report as they may be found in

Evaluation of IR Countermeasures
Interim Technical Report

(Model Methodology)

June 26, 1972

The gasses used to form the atmosphere for IR purposes are:  ${\rm CO_2, H_2O, O_3, N_2O}$ . That these are indeed the major contributions can be seen from fig. (1) which shows a low resolution solar spectrum and the gasses which form it. The additional gasses shown here have little effect for two reasons



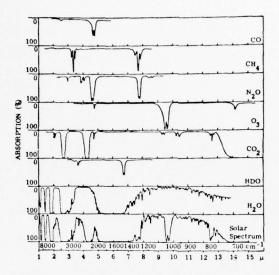


Figure 1. Atmospheric Makeup



- 1) Path lengths which will be considered by "Hide" are much shorter than those for a solar spectrum measurement and hence the actual absorption is much smaller than shown in fig (1).
- 2) The absorption bands of those gasses not included fall for the most part within other absorption bands and therefore their effect cannot be seen.

#### 2.1 Transmission Equations and Data

The transmission data for water vapor and carbon dioxide was obtained from a report by Wyatt, Plass and Stull under contract No. AF 04 (695)-96 for the Air Force Cambridge Research Laboratories in Bedford, Massachusetts. The reproduction work done on this report was of extremely poor quality as shown in Appendix A, and required a considerable amount of man hours to extract the required data. As can be seen the transmission is listed as a function of wavenumber and quantity of absorber. The resolution as depicted here was averaged over 5 cm<sup>-1</sup> but recorded at 2.5 cm<sup>-1</sup> and therefore, the original data was reduced according to an algorithm shown in fig (2). A third order collocation polynomial was used where indicated to interpolate beyond the given accuracy, as in the range 3400 cm<sup>-1</sup> to 3800 cm<sup>-1</sup> for H<sub>2</sub>0. A complete listing of the reduced data is shown in Appendix B.

-	,	-	-	۰
•	6			ì
	a	۰	٠	۰
•		·		

Wave No.	W.P.S. Data	Wave No.	Hide Data
1000	Data Averaged Over 5 cm <sup>-1</sup>	1000.	
3400	Data Reported at 2.5 CM <sup>-1</sup>	3400	Data Extracted at 5 CM-1
3400	Data Averaged Over 20 CM-1	3400 3800	Data Interpolated to 5 CM <sup>-1</sup>
	Reported at 10 CM <sup>-1</sup>	3800	Data Extracted at 10 CM <sup>-1</sup>
9990		9990	

H<sub>2</sub>O DATA USAGE

Wave No.	W.P.S. Data	Wave No.	Hide Data
507		507	
	Data Reported at 25 CM <sup>-1</sup>		Data Extracted at 5 CM <sup>-1</sup>
3800		3800	
3800		3800	
	Data Averaged		Data Extracted
	Over 2.5 CM <sup>-1</sup> &		at 10 CM <sup>-1</sup>
	Reported at 10 CM <sup>-1</sup>		
600		8600	

CO2 DATA USAGE

Figure 2. Data Extraction Algorithm



In the next section a method will be developed to reduce this data even further to an equation of the form

$$T = EXP (-AQ^B)$$

where:

A, B are constants found in Appendix B

Q = quantity of absorber

This equation is the "Hide" version of transmission for water vapor and carbon dioxide as originally described by Wyatt, Plass and Stull. It is considered superior for mathematical programming purposes as it is fairly easy to evaluate for any quantity of absorber and requires storing only two numbers A & B for each wavelength. The accuracy of this approximation is discussed in section 2.4. The transmission for O<sub>3</sub> and N<sub>2</sub>O is given by

$$T = EXP (-Aq^{.5})$$

where q = quantity of absorber in path.

This is the same equation used in previous versions of "HIDE". The "A" coefficients are reproduced for completeness in Appendix A. These numbers are interpolated down to 5 CM<sup>-1</sup> for the range 900 - 3800 CM<sup>-1</sup> and to 10 CM<sup>-1</sup> for the range 3800 - 9000 CM<sup>-1</sup> using a 3rd order collocation polynomial. The transmission due to scattering is of the form

$$T = EXP (-A \lambda^{-B})$$

and is described more fully in Section 2.5.



2.2 H<sub>20</sub> and CO<sub>2</sub> Curve Fits

To interpolate the data in Appendix B between quantities of absorber a curve fit had to be obtained to a proper function. The function which was used and found to be quite satisfactory was of the form:

where A & B are constants dependent on wavelength and q is the quantity of absorber.

To obtain A & B the criteria used was to minimize:

$$S = \sum L_N(T_i/M_i)$$
 2.2.1 for each wavenumber,

where:

 $M_{\rm i}$  = the measured transmission of W.P.S. Appendix B

$$T_i = E_{XP} \left( -A q_i^{-B} \right)$$

This has the tendency to attach equal weights to both small and large numbers as we are actually minimizing a ratio of two numbers rather than the absolute difference as in a least squares routine. Other functions of this ratio of course could have been used such as:

$$S = \sum (1 - T_i / M_i)^2$$

or  $S=1-\sum_{i}(T_{i}/M_{i})^{2}$  etc. each one of which would have produced

a slightly different curve fit. More investigation into this area probably should be undertaken, as it is 2.2.1 is fairly easily solved for A & B. Upon expansion:

$$S = \sum (A q_i^{-B} + L_N(M_i))^2$$



setting the derivative to zero we have:

$$\frac{\partial S}{\partial A} = \sum (Aq_{i}^{-B} + Ln(M_{i})) q_{i}^{-B} = 0$$

$$A = \frac{-\sum q_{i}^{-B} Ln(M_{i})}{\sum q_{i}^{-2B}} \qquad 2.2.2$$

The derivative with respect to B could now be taken, however, this leaves us with a transcendentel equation, and it was decided that a more direct approach was advisable. Thus B was varied in a direct search technique, A was then evaluated from 2.2.2 until a minimum value of S was found. A program was written incorporating this technique and exercised on the entire spectrum of W.P.S. data. In addition this routine sorted the data according to fig. (2) and produced a listing and mag tape file in a "HIDE" compatable format. The resultant listing is shown in Appendix B. with the A's and B's shown under their respective column headings.

#### 2.3 Error Measure

or

The error measure discussed in section 2.2 being non linear has a certain tendency to minimize the ratios of transmission to measured values in a slightly abnormal fashion. That is as the ratio tends toward zero the error blows up much more rapidly than when the ratio becomes larger due to the nature of the natural log. This produces a slight tendency to overestimate the transmission. This effect is so minimal however, as the ratios oscillate about 1, that it takes extremely close observation to notice. On the more positive side this calculation was found to be extremely sensitive to keypunch errors, i.e. large deviation from the exponential curve. Keypunching although just tedious for most jobs



presented major difficulties in creating this transmission model. The zerox copies from which the data was cut were almost illegible in certain bands; caused in part by the magnification required to make the print large enough to read and partly to blurs in the originals shown in Appendix A. It was decided because of this that the normal validation usually done by the keypunch girl should not even be performed as many interpretations could be made of the same data point. Several other methods, therefore, had to be employed to remove keypunch and other interpretation errors. One device used was to check the values of transmission with increasing absorber quantity, for this function must be monotonically decreasing. This alone uncovered a tremendous amount of errors, however, it was found that an equally sensitive criteria was to observe values of the error function S. Wherever this was found to be large inevitably a keypunch mistake was also uncovered. In some cases this amounted to an error in the third significant digit. Thus, although, it was unexpected the choice of this log function curve fit proved to be very helpful in debugging the W.P.S. data.

2.4 Comparison of Wyatt Plass and Stull with A & B Curve Fits

Fig. (3) shows the results of an exercise to compare some actual data to its respective A, B exponential curve fit. An attempt was made to list a wide range of error values so that a goodness of fit could be determined for any of the curve fits in Appendix B. In this figure the error entered under each actual or measured value is the absolute relative error whereas the error in the last column is the log function described in section 2.2.

# UNCLASSIFIED



		100.	700.	5000	010.	. 020	.010	. 100		. 200	.00	.00		0.0	0.0	20.0	ENROP
\$230.	ERROR CALC	000	000	# 0 F	606 606	9006		6 0 Q	905	979	767.	000	404 909	0000	 	000	000
.0545		000	0000		0000	-				000	900	9000	000	900	.011	352	000
2655.		000	0000					0000	000	.000	. 993	3 M A	400 400 400 400 400	0 0 0 0 0 0 0 1 0	.002		
9	ERHCAL CALC	000 000 000 000 000	9000	.040	1000			030	0.047	2000	000	000	000	000	000		.010
1620.		000 000 000 000 000	9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	700	5012	1001	.210		.0024	0000	000	000	000	000	000	000	.010
2365.		000	000	000	000 000	756.	. 000. 100. 100.	400	200 200 200	705	010	9000	730	615	.077	9201.	.010
3635.		800	70.4	0.50	5070	100 100 100 100 100 100 100 100 100 100	77.1.	755.	010	000	000	000	000	000	000	000	•
3675.		. 023	417.	151		.102	105	. 223	0000	000	000	000	000	000	000	000	.15
3595.	EHROH CALC	 8.1.1 8.6.1	103	919	1011	.243	1001	988.	0000	000	000	000	000	000	000	000	. 600
	EXTUAL CALC		.037	0.00	132	.196	.312	227	1010	000	000	000	000	000	000	000	057

Figure 3. Curve Fit Errors

### UNCLASSIFIED



#### 2.5 Scatter Function

The scattering function for real atmospheres as given in the Handbook of military infrared technology is of the form:

$$T = EXP \left(-\alpha \lambda^{\delta}\right) \qquad \lambda = \text{wavelength}$$

where  $\propto$  and  $\gamma$  are functions of concentration and size of the scattering particles. These particles could be haze, smog, clouds or water vapor normally found in the atmosphere. The exact dependence is unknown although it is generally recognized that  $\gamma = 4$  for very small particles,  $\gamma = 2$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for a particle diameter equal to  $\gamma = 4$  for very small particles,  $\gamma = 4$  for very small

= 3.21/VISR

where VISR = visual range in kilometers.

Fig. 4 is a representative plot of a more complete validation exercise found in Appendix D. It is included here as a quick reference to point out the difference between the optimum scattering function derived in Appendix J and the general scattering functions described above. The

## UNCLASSIFIED



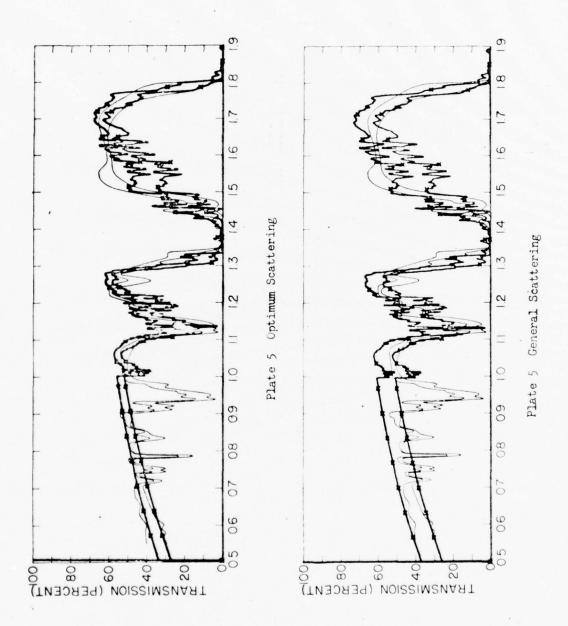


Fig. 4 Optimum and General Scattering for Yates & Taylor

2-11

#### UNCLASSIFIED

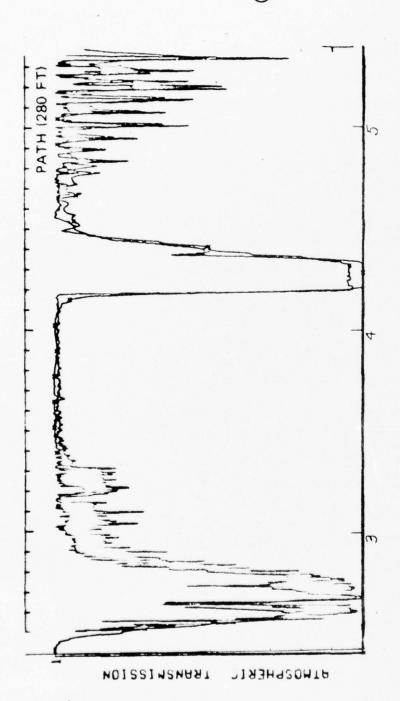


"Hide" model is plotted over top of the validation data (Yates and Taylor) in both cases. It can be seen that there is a definite difference in the two scattering functions and hence that there is an inherent error in the "Hide" transmission model which cannot be corrected at this time as scattering particle distributions are in general never given or unknown. It is felt, however, that the use of  $\mathcal{T} = 1$  which may be considered as a typical atmosphere will yield minimal errors.

#### 2.6 G.D. Comparisons

In this section the results of an atmospheric model validation study will be presented. The data that was used was recorded from real atmosphere observations by General Dynamics and presented in a report for the Army. It consisted of short ranges from 280 ft. to 6000 ft. under varying meterological conditions of relative humidity and temperature. The Hide model was used in conjunction with a special plotter program to generate curves of the same spectrum with identical atmospheric parameters. These graphs were run off with small "x's" every .3 inches and were overlayed on top of G.D. A representative plot of this exercise is shown in figure 5 while the complete set of data is shown in Appendix C. A value judgement as to the goodness of fit is very difficult to make here as we have little knowledge about the mean and standard deviation (repeatibility) of the G.D. data. Furthermore the scale factor used in such a presentation plans an important role in how good looking the comparisons are and in fact these figures were blown up from the original G.D. report. In spite of these difficulties one observation can be made from this study in favor of the "Hide" model. It can be said quite positively that the model responds properly to varying concentrations of H2O and carbon dioxide.





.19 pr cm/km RELATIVE HUMIDITY: ATMOSPHERIC PATH: AIR TEMPERATURE: PRECIPITABLE H20:

Figure 5.

2281 FT

ALTITUDE: G.D. Validation Sample



Since the secondary spike at 4.1  $\mu$  as well as the entire region from 4.3 - 4.5  $\mu$  is caused entirely by CO2 the functional dependence with concentration of this gas can be seen by scanning the figures of appendix C. It appears to be nearly perfect for these ranges. The water vapor dependence is slightly harder to see due to the poor quality of the reproduction, however, the absorption in the dense region from 3-3.5  $\mu$  is due entirely to H<sub>20</sub>. Although the two curves are almost indistinguishable here, the correct trend can be seen particularly at the longer ranges.

Thus although definite conclusions cannot be drawn from the limited data available some confidence can be obtained in the "Hide" atmosphere from this study.

#### 2.7 Yates and Taylor Data Comparisons

Yates and Taylor at the Naval Research Laboratory in Washington undertook to study and compile data relating to atmospheric transmission in real atmospheres. The data was taken under a wide variety of weather conditions and for extremely long path lengths of from 3.4 to 10.1 statute miles. The results of the study are a series of plates or curves of relatively high resolution extending from .5 $\mu$  to 15 $\mu$ .

For validation purposes the Hide atmospheric model was compared with the Yates and Taylor data and presented in Appendix D.

In Appendix D two sets of curves are presented to show the effects of the optimum best fit scattering functions described in section 2.5 v.s. the general scattering function. The optimum function is decidely better for all plates except plate 11 where because of the short range scattering is neglegible.

In looking at these plates several things should be noted.



1) The major windows

are well defined and show good agreement between the two models.

- 2) As can be seen from fig. (1) water vapor accounts for most of the strong absorptions in the Yates and Taylor measurements above 10  $\mu$ . The Hide model contains no H2O in this region and thus the bad fits in the high wavelength regions are expected.
- 3) Although the major gasses have been included in the Hide model there are others present. Some of these along with their major absorption bands are shown in fig. (1).
- 4) The resolution of  $N_{20}$  and  $O_3$  shown in Appendix C is relatively low compared with H2O and CO2.
- 5) There could be large fluctuations in gas concentrations along the paths since the distances considered by Yates and Taylor are so long. In light of the above remarks the agreement between Hide and Yates and Taylor data is considered to be quite good.



### 3.0 EMISSION MODEL

For purposes of computing the emission spectrum, the plume is considered to be composed chiefly of water vapor and carbon dioxide. Knowing the transmissions of these gases, the emission may be computed as:

These transmissions have been computed as functions of temperature dependent data by Jackson and Ludwig and are summarized in the following sections.

For a determination of the accuracy and origin of this emission model figures 1, 2 should be referred to.

## 3.1 HoO Ludwig Transmission Equations

The transmission model of Ludwig is described mathematically as follows:

C = Mole fraction

T = Temp OK

To= Ambient Temp OK

Pt= Total pressure (atmospheres).

 $d = EXP (-.\infty16T + 1.21)$ 

 $U = P_t CL 273/T$ 

L = Path length (CM )

K = Absorption coefficient which is temperature and wavelength dependent and can be found tabulated in Appendix E.

Hide uses a second order collocation polynominal to interpolate between 300°K and 1000°K and a third order polynominal to interpolate between wavenumbers to the desired wavelength.

-	-	-	
•	-		•
ľ	v	v	m
ı	1	1	
•	٠.	-	•

	T		T .	I	
NO.	ORIG	INAL DATA	NO.	HIDI	E MODEL
500	Data due t recorded a	o C. B. Ludwig t 5 cm-1	500	Data extracte	xd at 5 cm <sup>-1</sup> .
880			880		
		NO DATA TRANSMIS	SION EC	UAL UNITY	
2050	Data due t recorded a	o Jackson t 5 cm <sup>-1</sup>	2050	Data extracte	sd <b>a</b> t 5 cm <sup>-1</sup> .
2400			21,00		
21,00	NO DATA AV.	AILABLE	2400	Data extrapol Jackson 2050 J. Goodell at	- 2400 data by
2500			2500		
		NO DATA TRANSMISSI	DN BQU	AL UNITY	
3000	"K" data due to Ludwig at 10 cm 1.	"A" data due to Ludwig at 10 cm <sup>-1</sup>	3000	"K" data interpolated	"A" data inter- polated down to 5 cm <sup>-1</sup> .
3560			3560		
	"K" data due to Ludwig at 5 cm <sup>-1</sup> .			Data extracted at 5 cm-1.	
3770			3770		

Figure 1: CO<sub>2</sub> DATA USAGE

**W**-

WAVE NO.	ORIGINAL DATA	WAVE NO.	HIDE MODEL
50	Data due to Ludwig recorded at 25. cm <sup>-1</sup> .	50	Data interpolated down to 5 cm
		3800	
			Data interpolated down to 10 cm <sup>-1</sup> .
9300		9300	

Figure 2: H<sub>2</sub>O Hot Gas Usage



An example of the results of this double interpolation is given in Figure 3 which shows the transmission data of H2O for the temperature range 300°K to 1500°K. This table agrees with Ludwigs data at 300°, 600°, and 1000°K as it must and varies smoothly between these points. The error between this interpolation and the true function "f" at the temperature "T" as given in elementary numerical analysis is:

$$E(T) = \frac{G(3)}{5!} (T-300) (T-600) (T-1000)$$

Where f ( ) is the third derivative of the true transmission at some temperature (f ) between 300°K and 1000°K.

It is interesting and important to note that this function blows up beyond 1000°K and should not be used as an extrapolation routine here. However, the expected temperatures are below 1000° and will cause no problems.

### 3.2 CO2 Ludwig Equations

For the range 3000-3770 cm<sup>-1</sup> (500-800 cm<sup>-1</sup>), the Carbon Dioxide transmission model is due to Ludwig. The equations are:

$$T = EXP \left(-KU/\sqrt{1 + KU/4A}\right)$$

$$U = PP_{CO_{2}} \times P \times PL \times 273/T$$

$$P = Pressure atmospheres$$

PPCO2= Partial pressure CO

PL = Path length

T = temperature oK

A,K are given in tabular form in Appendix F as a function of temperature and wavenumber.

To interpolate between wavenumbers, a third order collocation polynominal is used, whereas temperature interpolations between 300°K and 1200°K are



	Í	20 TRANSMI	SSION DATA								
	300.	.004	500.	.009	70L	.008	.000	.000	1100.	1200.	1500.0051
2110.	·150-02	.431-02	.730-02	105-01	.140-01	.17A-01	.218-01	10-092.	10-501.	14-651.	10-000.
2115.	.145-02	.399-02	.676-02	.978-02	1131-01	10-991.	.203-01	10-116.	10-986.	. 431-01	. 481-73
2120.	.136-02	23-075.	.628-02	-010-02	175-61.	154-01	.100-01	10-756.	.267-01	. 110-01	10-154.
2125.	.127-02	.346-02	.587-02	.850-02	.111-01	.144-01	177-01	.212-01	10-672	. 249-11	.427-11
2130.	.114-02	.330-02	.561-02	.809-02	100-01	.136-01	.166-01	10-401.	10-666.	10-692.	. TAK-1
2135.	110-02	.317-02	.539-02	.775-02	.103-01.	.120-01	.157-01	.186-01	.216-01	. 24 9-11	154-11
2140.	105-02	.306-02	.520-02	.743-02	· 977-07	.122-01	.147-01	1174-01	10-106.	.230-01	10-164.
2145.	.947-03	20-162.	.500-02	.713-02	.931-02	.116-01	.170-01	10-191.	10-781.	.212-01	10-100.
2150.	.880-03	.282-02	479-02	.680-02	· 885-73	10-601.	130-01	.152-01	17/1-01	106-01	.264-01
2155.	.818-03	.258-02	.438-02	.624-02	· 811,-02	.101-01	121-01	.141-01	162-01	.184-01	.251-01
2160.	.761-03	.232-02	.395-02	.565-02	.742-FS	.925-02	.112-01	.131-01	.152-01	1173-01	10-646.
2165.	.709-03	.207-02	.352-02	.507-02	.67:-02	.845-02	.103-01	10-001	10-641.	.164-01	10-156.
2170.	.662-03	.182-02	.310-02	.451-12	-604-n3	.770-02	c0-un6.	.114-01	.134-01	156-01	10-662.
2175.	.620-03	159-02	.272-02	20-004.	· 544-02	.704-02	.870-02	.107-01	128-01	.150-01	10-200.
2180.	.584-03	.146-02	.250-02	.372-02	.511-02	50-199.	.840-02	10-101.	10-441.	.146-01	.224-01
2185.	.553-03	.135-02	.233-02	.349-02	- 484-03	.637-02	.800-00	.100-01	.121-01	.144-01	.224-01
2190.	.525-03	.125-02	.218-02	.330-02	cu-c94.	.613-02	.7A5-02	.075-02	.119-01	10-641.	10-666.
2195.	.501-03	.117-02	.205-02	.314-02	CU-174.	.592-02	.763-02	20-1-05	.116-01	.140-01	.225-11
2200.	.480-03	.110-02	.193-02	.298-02	· 424-00	.572-02	.741-02	.071-02	.114-01	.138-01	.224-01
2205.	.462-03	10-066	.174-02	.272-02	· 301-00.	.536-02	.701-02	. A P 9-02	1110-01	.133-01	.217-11
2210.	£0-055.	. 884-03	.156-02	20-945.	.360-CJ	24-864.	.650-02	. Auu-02	.105-01	.128-01	10-616.
2215.	.432-03	.783-03	.138-02	.221-02	.329-00	20-094.	.616-02	.706-02	100-001.	.123-01	10-900.
2220.	.418-03	.691-03	.121-02	.197-02	.20B-C2	.423-02	.572-02	.747-02	· 045-00	.117-01	10-401.
2225.	.405-03	.609-03	.106-02	.175-02	.260-00	.387-12	.520-03	· 606-02	C0-789.	.110-01	10-001.
2230.	.389-03	.566-03	.971-03	.161-02	.247-00	.356-02	-49A-02	.6"3-02	C0-024.	.102-01	174-11
2235.	.372-03	.532-03	.902-03	.148-02	.227-00	.327-02	c0-d115.	20-005.	20-127.	50-750.	.169-11
5540.	·350-03	.506-03	.847-03	.138-02	.210-02	.301-02	.411-02	20-055	CO-809.	. F55-12	147-01
2245.	.336-03	.483-03	. 799-03	.128-02	.194-02	277-02	.377-02	·404-02	. F28-07	20-011.	. 134-01
2250.	.321-03	.461-03	.754-03	.120-02	.1AC-07	.255-02	.346-02	.452-02	C0-177.	.710-n2	.121-01
2255.	.301-03	.414-03	.677-03	109-02	.166-02	.237-02	·324-02	.426-02	cu-255.	54-474.	116-01
2260.	.281-03	.365-03	.601-03	.987-03	.152-02	.221-02	.305-02	· " nu-02	-510-02	SU-944.	.114-01
2265.	.263-03	.318-03	.527-03	.889-03	.141-02	.208-02	.290-02	. 30-02	50-Tus.	.620-n2	.111-11
2270.	.245-03	.272-03	.457-03	.800-03	.130-02	196-02	-577-02	20-571.	CU-807.	.616-02	.110-01
2275.	.229-03	.231-03	.395-03	.721-03	.121-02	.186-02	.267-02	. 164-02	c0-774.	50-707.	100-01
2280.	.220-03	.207-03	.357-03	.671-03	.115-02	.179-02	-559-02	.356-02	. 468-02	598-n2	.104-01
2285.	.212-03	.188-03	.327-03	.630-03	.110-02	.173-02	.252-02	- TUP-02	00-097	50-A87.	10-701.
2290.	.206-03	.174-03	.304-03	.597-03	.105-02	.167-12	-245-02	50-0nk.	CU-05n.	54-778.	.104-01
2295.	.200-03	163-03	.286-03	.569-03	.101-02	.161-02	·276-02	20-024.	CO-851	-163-02	10-101.
2300.	.195-03	.156-03	.273-03	.544-03	FU-076.	.155-02	.229-02	.318-02	. 423-02	20-145.	50-800.
2305.	.188-03	.152-03	.258-03	.508-03	-006·	1144-02	.211-02	.203-02	20-002	50-00k.	.010-US
2310.	.180-03	.149-03	.246-03	.473-03	.828-01	.131-02	.192-02	.267-02	-154-02	20-454.	SU-184.

Table Obtained by Application of Double Interpolation Formulas to Ludwigs Data in Appendix E.



accomplished using a second order polynomial. Figure 4 and 5 show some data derived by this interpolation process. The numbers agree at the tabulated as they must and vary smoothly between data points.

## 3.3 CO Jackson

The  ${\rm CO}_2$  transmission model used for the range 2050-2400 cm<sup>-1</sup> is due to Jackson. This model is described as follows:

$$\Upsilon = \text{EXP} \left[ \frac{-2 \propto P_{\text{t}} R_{\text{k}}^2}{R_{\text{A}}} \left( \sqrt{1 + (R_{\text{a}}/R_{\text{k}})^2 L_{\text{e}}/\alpha} - 1 \right) \right]$$

Where:

 $P_{t}$  = pressure in atmospheres

$$\propto = .15 P_t \sqrt{300/T}$$

T = temperature (atmospheres)

$$L_e = 2.PP_{CO2} P_1$$

PP<sub>CO2</sub> = Partial pressure

P = Path length

RK and RA are given in tabular form in Appendix G as a function of temperature and wave number. A third order interpolation routine is used here to interpolate between temperatures. An example of this interpolation is shown in Figures 6, 7.

To obtain data for the range 2400 cm<sup>-1</sup> to 2500 cm<sup>-1</sup> an extrapolation procedure due to J. Goodell was used. It consists basically of extrapolating out to 2500 cm<sup>-1</sup> using a linear function based on end points of the Jackson data. The equations used are:

$$LN(V) = LN(Y)_{2380} + (V -2380) (LN(Y)_{2400} - LN(Y)_{2380}$$

$$LN(Y)_{2380} = R_k \text{ or } R_a \text{ at } 2380 \text{ cm}^{-1}$$

$$LN(Y)_{2400} = R_k \text{ or } R_a \text{ at } 2400 \text{ cm}^{-1}$$



1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,		300.	CG2 3000-3770 (A) DATA	5005	•00•	700.	•00•	• 000	1000	1100.	1200.	1900.066
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	3420.	.633-07	.325-01	.308-01	.517-02	754-01	0000					
10   10   10   10   10   10   10   10	3465	.127-06	.331-01	.307-01	.711-02	10-100	000	000	000	00+140	00+176.	.167+01
10   10   10   10   10   10   10   10	3430	.317-06	.332-01	10-001.	. 973-02	0.00	000		00011	. 766+00	00+625	10+761.
10   10   10   10   10   10   10   10	3435	.546-06	10-676.	.265-01	132-01	921-01	208+00	00000	00000	00+001	10+101.	10-102-
10   10   10   10   10   10   10   10		.136-05	.319-01	.260-01	.177-01	10-156	216+00	174.00	00000	000	10+601.	. 207+01
10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.000   10.0000   10.000   10.000   10.0000   10.0000   10.0000   10.000	7445	.256-05	.303-01	.224-01	.236-01	00.00	00401	00000	000	000	104401	.211.01
	1450.	.570-05	10-612.	176-01	. 311-01	004911	000000000000000000000000000000000000000	00000	00+20.	. 6 4 6 0 0	10+011	.215.01
10   10   10   10   10   10   10   10	1455.	.105-04	.250-01	115-01			00 - 6 - 5	00+101		00+570.	.113+61	.219.01
	3460.	.222-04	. 210-01	44.02			00+00	00+075	.634+00	.675+00	.116+01	.224+01
10   10   10   10   10   10   10   10	3465.	. 40e-04	.151-01	707-02	10-330		00+17*	00+047	• • • • • •	. 404+00	.119+01	.228+01
10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   10000   100000   100000   100000   10000   100000   10000   10000   10000	3470.	.621-04	.802-02	10-651			00.00	00+	7 8 + 00	00+576.	.121+01	.228+01
10   10   10   10   10   10   10   10	3475.	.147-03	.610-03	10-01	00 100	200	00.03	00+1+1	00+64	00+5+6.	156.01	. 226+01
10   10   10   10   10   10   10   10	3460.	.284-03	.879-02	0			00+00	. 286+00	. 7 3 8 + 0 0	00+796.	.127+01	.233+01
10   10   10   10   10   10   10   10	3465.	.500-03	.232-01	10-61		000000	00000	00+155	.768+00	.101+01	.129+01	.233.01
751-01 125-00	3490.	. 019-03	.377-01	. 973-01		00000	00.5.5.	00+000	00+77.	00+000	.121+01	.212+01
125-01   125-01   125-02   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   125-03   1	3495.	.265-02	10-177	001	000	00+02+	000+717	. 565+00	.739+00	.936+00	10+011.	.195.01
125-01   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   125-00   1	3500.	.274-02	.553-01	112		00.012	00+505	00+000	. 612+00	104201.	10+521.	.209+01
123-01   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   123-02   1	3505.	. 425-01	10-000				00+	00+740	.862+00	111101	135+01	.224+01
125-01   125-02   2277-02   411-02   511-02   561-02   642-02   641-02   110-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02   113-02	3510.	.751-01	.123.00			00 - 1 / 1 -	00+116	. 674+00	. Beo+00	.107.01	.130+01	.214+01
125+01   125+02   212+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   411+02   4	3515.	10-657	1125+00	200	00.000	300	00+00	. 666+00	. 634+00	.103+01	.124+61	.200+01
134601	3520.	.186-01	.125+00	2011	11.		00 + 1 = 5	.742+00	00+715.	1100011.	.131+61	.202+01
17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   17700   1770	3525.	.238-01	00.487	317.00	00011	00+116	. 661+00	. 8 Z Z + 0 0	00+556	.118+01	.137+61	.204.01
103-01   234-00   306-00   319-00   370-00   365-00   366-00   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   316-01   3	3530.	10-607	177.00	200		. 551+00	.696+00	. 846+00	.100001.	.116+01	.133+01	16601
124-01   234-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   264-00   2	3535.	.575-01	205000	00 100		00.	. 714+00	. 454+00	.589+00	.116.01	10.051.	100001
124-00	3540.	.783-01	.234+00	00000		•	. 145+00	. 867+00	00+785.	.110.011.	.120+01	150+01
157+00   261+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   417+00   4	3545.	.103.00	20000	0000			00+0//-	. 663+00	. FBB+00	.108+01.	.117+01	.134+01
113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   113400   1	3550.	.127+00	000	00.75	000000	00-11-0-	00+100	. 414+00	104001.	.114.01	.121+01	.143+01
159-00	3555.	.141.00	283+00	000	00+000	00+00	. 622+00	00+666.	10.501.	.115+01	.125+01	.146+01
207-00 3127-00 412-00 557-00 674-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 772-00 7	3560.	159.00	268400	000	000000000000000000000000000000000000000	00+0/0.	.785+00	.853+00	00+555.	.104+01	118+01	100071
Notice   N	3565.	.207.00	127+00	000000	00.	00+170.	.746.00	00+978	. 941+00	.103+01	111101	133.01
11	3570.	.245.00	.157+00	00 - 1 - 1 - 1	00+166.		.772+00	874+00	.972+00	.107.01	110+01	141+01
** ** ** ** ** ** ** ** ** ** ** ** **	3575.	.215.00	314+00	0045.44	00000	00+10-	00+001	00+958.	.100001.	.110+011.	10+031.	150.01
10   10   10   10   10   10   10   10	3580.	.201+00	00+482.	171.00			00+01.	941+00	00+426.	103+01	.114+01	.140+01
### ### ### ### ### ### ### ### ### ##	3585.	.303.00	.166.00	004810		0000	00+101	00+01/	. Et < + 00	.972+00	.104.01.	.145+01
125-00	3590.	414.00	00+057	2000	00.15		. 708+00	.815+00	. 532+00	.10000	.119+01	.165+01
**************************************	3595.	. 452+00	00-727	20.5	00 - 5 - 5 - 5		.767+00	. 8 60 + 00	.101+01	115+01	130401	186+01
Marker   M	3.000.	442.00	000	00.	00+116	00+000	00+0+1.	00+159.	00+005.	.113+01	129+01	10001
. 255-00 .251-00 .265-00 .313-0 .355-00 .551-00 .551-00 .551-00 .551-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-00 .351-0	1605.	147400			00.01.	00+000	.675.00	.745.00	. 516+00	10401	15401	
.251-00 .251-00 .254-00 .254-00 .251-00 .261-00 .262-00 .262-00 .262-00 .251-00 .123-01 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-00 .251-0	3010.	26.00	00000		. 12.00	00+101	.574+00	.641+00	.631+00	00+556	11601	
Marked	3615.	263+00	20000	00000	. 313.00	.365+00	.465+00	.612+00	.760+00	.947+00	110.01	104401
TOTAL TOTAL TOTAL OFFICE OFFICE STATE OFFI OFFI OFFI OFFI OFFI OFFI OFFI OFF	3620.	317.00	282	00.00	00+1+0	.364+00	00+997	00+009.	.7e2+00	00+066	123.01	.217.01
TOPER TOPER COPERS COPERS COPERS COPERS COPERS COPERS COPERS COPERS	3625.	170.00	200	0000	00+00	. 368+00	.479+00	.631+00	. e 2 5 + 00	.100001.	134+01	100117
10-5541 10-5511 00-10-50 00-10-61 00-10-51 00-10-51 00-10-51 00-10-51 00-10-51	1630.		2000		00000	. 170.00	.488+00	00+074.	00+679.	110.011	110.01	
			*****	00+00	. 356+00	. 24.00	. \$14+00	00+100.		1119.01	10.5	24440

TABLE OBTAINED BY APPLICATION OF DOUBLE INTERPOLATION FORMULAS TO LUDWIGS "A" DATA IN APPENDIX F. FIGURE 4.



	1500.066	.723-01	10-729.	.930-01	.105.00	.116+00	.134.00	1148+00	.165.00	.164.00	30+002.	.216+00	.235+06	30+092.	30+575.	30.052.	.314+06	.335+00	30+775.	30+475.	.355+00	.357+00	30+775.	.331+00	.337.00	.334+00	30+052.	201/62.	196+06	.171.00	153+00	.115.00	. 936-01	.133+00	.154.00	.181+0C	30 - 1 7 7 .	.347+00	.363.00	30+80E .	.361+00	30+615.	243+00	.363+00
	1200.	.362-01	. 418-01	. 468-01	10-125.	10-155.	.664.61	.742-01	. 629-01	10-120.	.101+00	.111100	.163+00	.135+00	.145+00	.155+00	.170+00	.160.00	.150+00	.205+00	.218+00	.231+00	00+072.	.248+00	.257+00	.256+00	.273+00	.276+00	.271+00	. 254.00	. Ze 1+00	.268+00	.263+00	.250+00	.278+00	00+662.	. 250+00	.262+00	.241+00	. 200+00	. 1 4 6 0 0	.191.00	. 216+00	. 241+00
	.0011	.266-01	. 306-01	.347-01	.391-01	10-557.	. 492-01	.556-01	.617-61	. 666-01	.757-01	.834-01	.967.01	.104+00	.110+00	118+00	.136+00	. 144+00	.156+00	.166+00	. 160+00	33.551.	.204+05.	.241+00	. 231+00	.246+00	.261+00	.276+00	.279+00	.265+00	. 278+00	00+557	00 - 552 .	.200.00	.313+00	.330+00	.311+00	.261+00	.265+00	00+621.	.159+00	.133+00	00+10	. 2 2 8 + 0 0
	10001	.168-01	.214-01	.243-01	.274-01	.306-01	.346-01	. 360.01	.434-01	. 465-01	.537-01	10-755.	.665-01	.740-01	.eoo.	. 676-01	.987-01	.110+00	.120+00	.131+00	1145+00	.161+00	.177+00	194+00	. £ 0 5 + 0 0	.219+00	.245+00	.268.00	.278+00	.267+00	.265+00	.311+00	.315+00	00+952.	339+00	.157+00	334+00	. E 6 9 + 0 0	.221+00	. 164+00	00+061.	.104+00	143+00	.232+00
	• 000	.121-01	1138-01	157-01	.176-01	10-851.	. 223-01	.251-01	.282-01	.316-01	.352-01	.394-01	.445.01	.501-01	.552.01	. 614-01	.701-01	10-652.	. 869-01	10-556.	00 + 711.	.130+00	.148+00	.166+00	179.00	195+00	.226+00	. 253+00	.269+00	.261.00	.282.00	.314+00	.322+00	302+00	.356+00	.3e1+00	360+00	.308+00	.230+00	.157+00	.111+00	.955-01	.151+00	.252+00
	. 000	.671-02	.766-02	.872-02	50-785	.1111-01	1125-01	.148-01	.160-01	.181-01	. 204-01	.231-01	.266-01	.306-01	.346-01	.395-01	10-797.	. 544-01	.626-01	.725-01	.857-01	.101+00	.120+00	.139+00	.154+00	.171+00	.203+00	.232.00	.250+00	.246+00	.270.00	.30€+00	.316+00	00+662.	.365+00	00+007.	.389+00	.337+00	.251+00	.156+00	.100+00	.115+00	.166+00	.289+00
	.002	.269-02	. 308-02	.351-02	.398-02	. 452-02	.515-02	20-055	. 680-02	.788-02	.916-02	108-01	10-621.	156-01	.186-01	. 224-01	.275-01	.337-01	. 408-01	10-754.	.615.01	.758-01	.930-01	.111+00	.120+00	.147.00	.176+00	.204000	.222.00	.223+00	.248+00	.286+00	.301+00	.286+00	.3 + 6 + 00	.416.00	.421.00	.376+00	.284+00	.161+00	.988.01	.161.00	.254.00	.343+00
	• 000	.123-04	.218-04	70-607	.708.04	.127-03	.213-03	.363.03	.591-03	. 956.03	109-03	. 430-02	. 343-02	502-03	.714-02	20-766.	.135-01	.180-01	. 236-01	.310-01	.408-01	.529-01	.675-01	.841-01	.103.00	.123.00	.147.00	.168.00	.165400	.191.00	.216+00	.254+00	.272+00	.265.00	.358+00	.428+00	.456.00	.425.00	.329.00	.174.60	.106+00	.232+00	.349.00	.413.00
0 (x) 04TA	2000	.113-02	151.02	.170-02	10.00	. 209-05.	. 229-02	.247-02	.261-02	.247-02	. 259.02	.213-02	140-05	110-05	20003	.213-02	. 424-02	.712-02	1111-01	.165-01	.237-01	. 327-01	.036-01	566.01	.773-01	. 983-01	.115+00	.120+00	.136+00	.151+00	.175.00	.210.00	.230+00	.234.00	.341+00	00+917.	00+557.	00.584.	.387.00	.193+00	.123+00	.329+00	00+74.	.501.00
CO2 3000-3770 (x) DATA	0001	.133-02	.152-02	.172-02	192-02	.213-02	. 236-02	50-652.	.281-02	20-862.	304-05	310-02	305-02	.2775.	. 200-02	.100-02	.148-03	.112-04	.365-02	.623-02	.102-01	.152-01	.202-01	.295-01	.583-01	.737-01	.767-01	.772-01	.e31-01	.102+00	.124.00	.154.00	.177.00	.195.00	.316+00	00.077.	.535+00	.554+00	.457+00	.220+00	.148+00	.452+00	.628+00	05+00
	300.	90-911	000	000	000	.233-09	. 466-09	50.00	140-06	90-959	163.08	130-07	330-04	146-06	297-03	.530-03	.300-03	120-04	915-05	.834-04	.178-03	.475-03	158-03	.216-02	.274-01	. 469-01	.365-01	.213-01	188-01		.636-01	. 861-01	.111.00	.147+00	.283+00	00+077	.578+00	.634+00	.539+00	.253+00	182.00	.601+00	. 811+00	.726+00
		.050	425.	430.	435.	.044	445.	.050	455.	.000	.65.	470.	.75.	.080	465.	.040	. 567	.005	505.	510.	1515.	520.	525	530.	535.	1540.	.5.55	1550.	1555	1500.	565.	1570.	1575.	.580.	.585	.0651	1595	.000	1605.	610.	615.	.029	1625.	.010

TABLE OBTAINED BY APPLICATION OF DOUBLE INTERPOLATION FORMULAS TO LUDWIGS "K" DATA IN APPENDIX F. FIGURE 5.



*** *** *** *** *** *** *** *** *** **			200		100.	.008	.006	1000	1100.	1200.	1500.CEG #
372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03  372-03	.156-02 .679-03	.679-03		10	.301-03	.276-03	340-03	.427-03	.473-03	10-017	.108-04
3300-03	20-041. 20-622.	146-02			.363-03	.323-03	10-057	.614-03	.674-03	\$20-05	. 266-06
\$ 50.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.00   10.0	20-152. 20-657.	.234-02			. 449-03	.370-03	. 572-03	.634-03	.946-03	.637-03	.477-02
10   10   10   10   10   10   10   10	.786-02 .363-02	.363-02			. 453-03	. 175-03	.753-03	.122-02	136-62	.623-03	.919-06
1797-02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 02 1190 0	10-101.	20-005.			.546-03	. 420-03	.957-03	.161-02	.163-62	.106-64	.126-01
100   00   100   00   100   00   100   00   100   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00	.202-01 .113-01 .542-02 .208-02	.542-02			E0-039.	.542-03	.115-02	.166-02	.214-02	. 134-02	134-01
100-102	20-091				. 615-03	.783-03	110-05	.153-02	.221-02	.166-02	.970-06
10   10   10   10   10   10   10   10	201015	000000000000000000000000000000000000000				.107-02	70-11-05	. 194-02	. 221-02	. 204-02	-418-06
	201000				204/21.	20-051	20-161	70-041.		. 25 4- 02	. 450-01
100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100	152-02	2010			00101	2011	201010	70 - 70 - 70	30-643-	.261-06	. 36.00
10   10   10   10   10   10   10   10	115-02	120-02			172.02	20100	215-02	201100	20-20-	. 20 - 0 - 0	
17.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00	.634-03	.96.			164.02	202-02	232-02	545-02	234-02		20.722
10   10   10   10   10   10   10   10	.634-03 .764-03	.764-03			.143-02	179-02	.208-02	.224-02	215-02	60-03	20-07-
110 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.560-03 .693-03	.693-03			.113-02	.141-02	170-02	199-02	365-02	246-02	. 2 t 0 - 0 i
9468103 138602 138702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 148702 1	.601-03 .663-03	.663-03			.858-03	.107-02	.140-02	.169-02	.255-02	352-02	.611-02
9999103 115302 228202 444002 2010 2010 2010 2010 2010 2010	F0-769.	10-769.			.751-03	.948-03	. 138-02	. 214-02	.331-02	20-050	139-01
939-03 17302 228-02 754-102 174-103 755-102 777-103 755-102 777-103 755-102 755-102 777-103 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 755-102 75	.737-03 .765-03	.765-03			.722-03	. 946-03	.153-02	.242-02	436-02	.691-02	. 206-01
751-03	.854-03	· 6 4 3 - 0 3			.660-03	.939-03	.173-02	.328-02	.561-62	50-556	.303-01
771-03	.103-02	.100-08			.663-03	.891-03	. 155-02	20-217.	.774-62	.131-01	.432-01
. 231-03 . 237-02 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 238-03 . 2	.164-06	.154-02			. 464-03	.771-03	.220-02	.525-02	10-701.	.162-01	.622-01
1031-03	20-01.	154-02			.244-03	. 551-03	.247-02	.673-02	.141-01	10-255.	.667-01
104-03  105-04  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05  107-05	10-10-0	. 195-0			.623-04	.233-03	.278-02	. ce 2-03	.186-01	.343-61	.123.00
	20-572.	20-672.			0-017	1138-03	.365-06	.116-01	10-052.	. 4t 3-01	.169+0¢
	20-115- 20-15-	20-115-			.0.7.0.	.0720.	. 403-06	10-971	.331-01	. ele-01	.226+00
	20-155	70-150			20-111.	50-277	. 548-06	.196-01	10-777.	. 820-01	30+962.
	2017.20	30.5.					70-700	10.073.	10-000	.104+00	.366+00
10   10   10   10   10   10   10   10	401004				50-010	20-177		. 3 8 8 - 0 1	10-509	.143+00	30+567
121-00	.871-02 .773-02	.773-02			20-501	10-011	10-011	1000	000	****	20+150
.325=01 .720=01 .161+00 .165+00 .845+00 .477-01 .100+00 .165+00 .845+00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-00 .877-0	.991-02 .934-02	.934-02			.753-02	10-661	500-01	00.501		00000	3000
	.116-01 .116-01	.116-01			.145-01	.325-01	720-01	.141+00	246+00	197.00	150.01
.773=01 .141+00 .243+00 .393+00 .761+00 .120+00 .392+00 .761+00 .761+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+00 .424+0	.142-01 .159-01	.159-01			.248-01	. 497-01	.100+00	.165+00	.312+00	00+257	141.01
.121+00 .2C2+00 .324+00 .425+00 .726+00 .726+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+00 .425+0	.177-01 .223-01	. 223-01			10-924.	.773-01	.141+00	.243+00	393+00	00104	100001
.180+00 .279+00 .422+0 .618+00 .876+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .118+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00 .108+00	.226-01 .320-01	.320-01			.720-01	.121+00	.202+00	354+00	00+057	1754.00	167.01
**251+00 .367+00 .530+00 .751+00 .104+01	.352-01 .519-01	.519-01	-		.115+00	.180+00	.279+00	.422+00	.614+00	878+00	218-01
**************************************	.611-01 .661-01	.661-01	_		.173.00	.251+00	.3£7+00	.530+00	751.00		100100
**************************************	.102+00 .140+00	.140+00	_		.247.00	140+00	.473+00	00.004	000		1000
. 101/1/1 . 111/1/1 . 111/1/1 . 111/1/1	.156+00 .206+00	.206+00	-		1.00	45.00	00.50	000			
. 10+001. 10+121. 10+121. 00+840. 00+640.	.225+00 .240+00	00+062.	_			592+00	770+00	10101	13401		152.01
	300+00.	.389+00	-		00+600.	.769+00	.975+00	124+01	157401	1000	378.01

TABLE OBTAINED BY APPLICATION OF QUADRATIC INTERPOLATION FORMULA TO JACKSON "A" DATA IN APPENDIX G. FIGURE 6.



30 - 60 -	10000000000000000000000000000000000000	00000000000000000000000000000000000000	
			000000000000
•		0000000	202000
	######################################		
2000	00000000000000000000000000000000000000		
. 925-01			
. 823.01			
.751-01	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000000000000000000000000000000000000	
7067	00000000000000000000000000000000000000		
	1000		

TABLE OBTAINED BY APPLICATION OF QUADRATIC INTERPOLATION FORMULA TO JACKSON "K" DATA IN APPENDIX B. FIGURE 7.



### 3.4 Ludwig CO<sub>2</sub> 500-800 cm<sup>-1</sup>

The transmission model of Ludwig for the range 500-800 cm<sup>-1</sup> is given mathematically as follows:

 $\Upsilon = \text{EXP} \left( -\text{U*K} \right)$ 

 $U = (PP_{co2}) (P_t) (L) 273/T$ 

PPCO<sub>2</sub> = Partial pressure CO<sub>2</sub>

 $P_{t}$  = pressure atmospheres

L = Path length (cm)

T = temperature OK

K = absorption coefficient which is temperature and wavelength dependent and can be found tabulated in appendix H. Hide uses a second order collocation polynominal to interpolate between 300°K and 1200°K, hence, the interpolated numbers agree at the tabulated values and vary smoothly between them as shown in Figure 8.

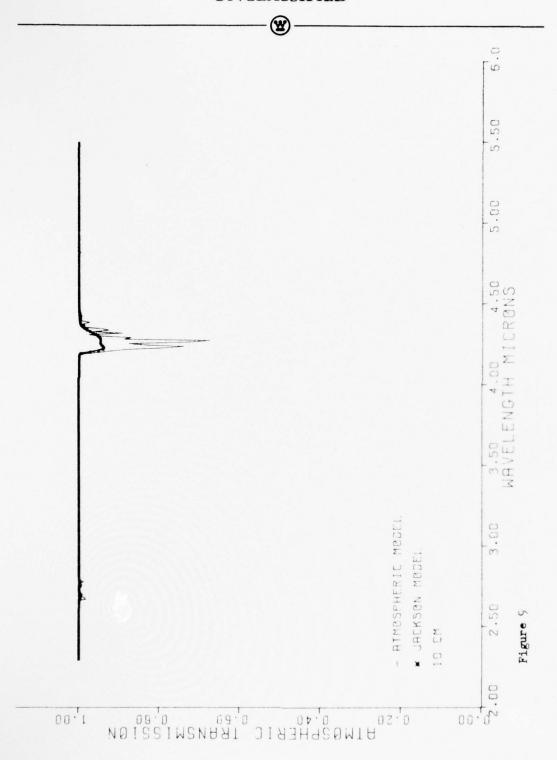
#### 3.5 Spectra Comparisons

The validation of the emission model was quite difficult as no experimental data was immediately available as in the transmission model, and it is expected that confidence in this program will only be obtained after several valid signatures have been computed. In the plume region 4-5  $\mu$ , however, it is possible to make a direct comparison between the emission and transmission models at 300°K. This region is important for the models must match up here or bad estimates will be obtained for the plume prediction. Figures 9-13 represent the results of this study which are considered to be quite good.

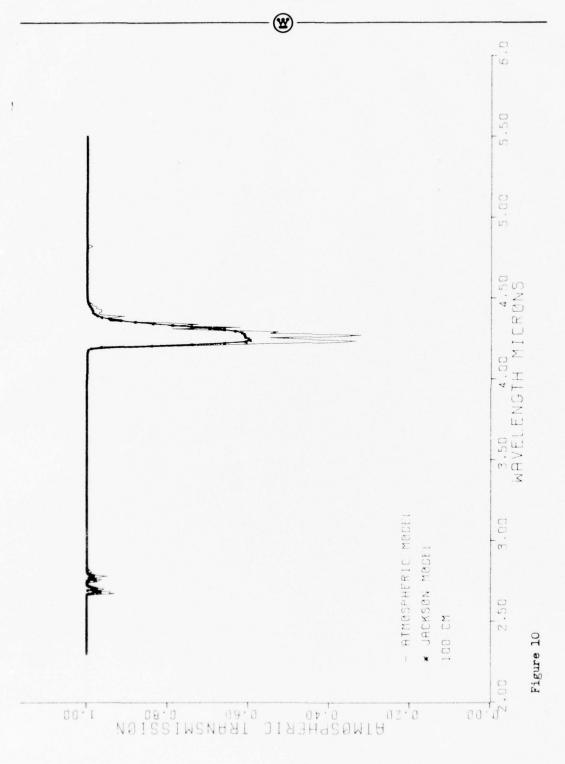


	×																																									
	1500.CEG	0000	0000	000	000.	000.	.176-01	. 220-01	.570-01	.660-01	.900-01	.960-01	.980-01	10-046.	.164+00	.123+00	.123.00	.163+00	.252.00	339906	.591+00	30.046.	.568+00	. 630+0C	.106+01	.787.0C	.855+00	30.064.	.105+01	.118+01	.134.01	.177.01	.186+01	.154.01	10.077.	.470+01	10+007	.190.01	. 200+01	.216+01	.176.01	.101.01
	1200.	000	0000	0000	0000	0000	. 680-02	.110-01	.265-01	.330-01	. 450-01	10-050.	10-057	10-0an.	10-028.	10-059.	.820-01	.117+00	.170+00	.270+00	00+007	.275+00	00+017	.710+00	00+026.	.610+00	.720+00	.920+00	.107.01	.115+01	.146+01	.198+01	.200+01	10+784.	.370+01	.580+01	.330+01	10+002.	.230+01	.218+01	.172+01	.143+01
	1100.	0000	0000	0000	000.	000.	. 656-02	. 815-04	.211-01	.244-01	.333-01	.363-01	.303-61	,35e-01	.607-01	.544-01	10-569.	.106+00	.146+00	.236+00	.345+00	.255+00	.387+00	. 661+00	. 657+00	.552+00	.670+00	00+158.	.10e+c1	10+111.	.151+01	.206+01	.20¢+01	10+651.	10+656.	.600+01	.316+01	10+002.	.237+01	.217+01	. 10000	10+671.
	.000	000.	0000	000	000.	000	. 456-02	50-075.	.148-01	10-171.	.233-01	.254-01	1052.	10-672.	. 425-01	10-017	.565-01	. 883-01	.124+00	.204+00	.253+00	* \$35+00	.345+00	. 608+00	.769.00	00+151.	. e17+00	. E & 5 + 00	.103+01	.112.01	.155+01	.220+01	.213.01	.202.01	10+077.	.611+01	.306+01	.214+01	. 243+01	.215+01	.163+01	.151.01
	.006	0000	0000	0000	0000	000.	.293-04	.347-02	20-056	110-011	.150-01	.163-01	.163-01	.160-01	.273-01	.305-01	.476-01	10-5-1.	.103+00	.173+00	.246+00	.217+00	304+00	.550+00	.717+00	00+957	. Se2+00	.823+00	.100001.	110+011.	.160.01	.233+01	.261+01	.211101	.510+01	.613+01	.300+01	.223.01	.247+01	.212+01	.158+01	10+691.
	8000	0000	0000	0000	0000	0000	.163-02	20-05.	. 528-02	-611-02	.633-02	20-109.	20-106.	50-688.	.152-01	.211-01	.380-01	.611-01	.846-01	.143+00	.203+00	00+661*	.265+00	. 488+00	. 639.00	374.00	00+105	.772+00	00+155.	108401.	.100001	10+872.	. 229+01	.219+01	.603+01	.607+01	.299+01	.234+01	10+672.	.209+01	.151+01	10+77.
	100.	0000	000.	0000	0000	0000	.652.03	.815-03	.211-02	.244-02	.333-02	.363-02	. 3 £ 3 = U Z	350-05	.667-02	.134-01	.289-01	.481-01	.675-01	.115+00	.165+00	.181+00	.257+00	.451+00	.557+00	*352+00	.443+00	.711+00	.963+00	10001.	.171+01	.264+01	.238+01	10+122.	.720.01	.553+01	.302+01	10+972.	.2.0+01	.205+01	.143+01	10+111
CATA	.009	.000	000.	000.	000.	0000	.146-09	.146-09	.233-09	.233-09	.233-09	60-869.	50-869.	. 466-09	\$0-869.	.750-04	.205-01	.355-01	.520-01	. 880-01	.130+00	.165+00	.190+00	.350+00	.470+00	.265+00	.380+00	00+079.	00.048.	.103+01	.177+01	.282+01	. 54P+01	10+122.	.860.01	.570+01	.310+01	. 260+01	.250+01	.200+01	.135.01	10.021.
(W)	2000	000*	.000	.000	000.	000.	326-03	407-03	106-02	124-02	167-02	181-02	181-02	176-02	- · 30 4 - 0 5	.326-02	.124-01	. 233-01	.384-01	. 625-01	.995-01	.144.00	.155+00	00+622	.376.00	* 204+00	.314+00	.560+00	.767.00	.100.01.	.183.01	.301+01	. 556+01	10+172.	.10400	.539.01	.322.01	10.575.	.248+01	.195+01	.126+01	104401.
2 500-880	.007	0000	0000	0000	000.	000.	.326-03	. 407-03	.106-02	.122-02	.167-02	.181-02	.181-02	.178-02	304-05	.778-03	.607-02	.114-01	.261-01	.380-01	.732-01	*134+00	.121+00	194400	*281+00	.153+00	.246+00	* 470+00	. 683+00	00+276	.189+01	.366+01	10+012.	10+8+2.	.121+02	10.667.	.339+01	10+242.	10+5+2.	.189+01	.115+01	00+00
ž	300	0000	0000*	000.	000	0000	.582-10	.873-10	.116.09	.000	. 233-09	.233-09	.233-09	.233-09	. 698.09	0000	. 233-09	. 466-09	.157-01	.150-01	.510-01	.180.00	. 680-01	.110+00	.180+00	10-016	.178.00	.370+00	00+065	0000000	. 1 96 + 01	.345+01	. 666+01	.254+01	.142+02	.450+01	. 3e0+01	.310+01	.240+01	.182+01	.10401.	00+055.
		2000	205	210.	515	250.	525	.015	535.	2.00	245	.055	555	240.	565	570.	575.	260.	200	2.00	262	.009	.504	.010	615.	.020	625.	630.	635.			. 020				. 0 . 0	.5.0				. 5	.001

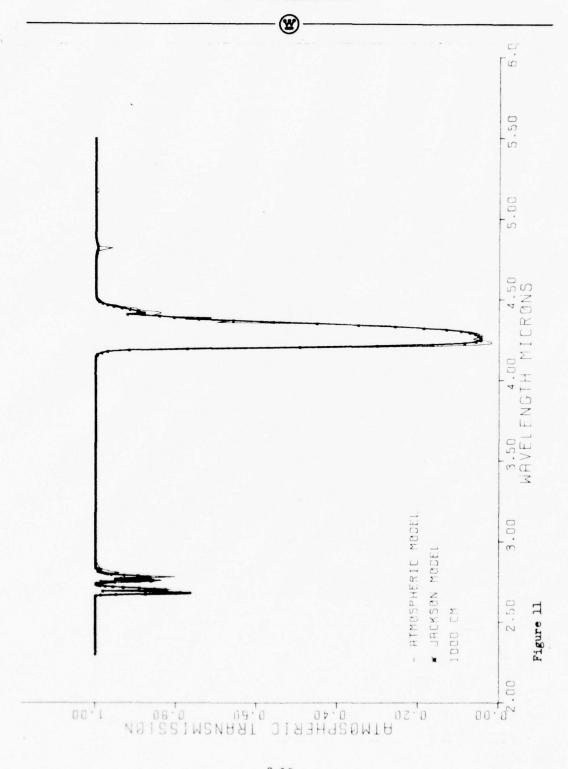
TABLE OBTAINED BY APPLICATION OF DOUBLE INTERPOLATION FORMULAS TO LUDWIG DATA IN APPENDIX H FIGURE 8.



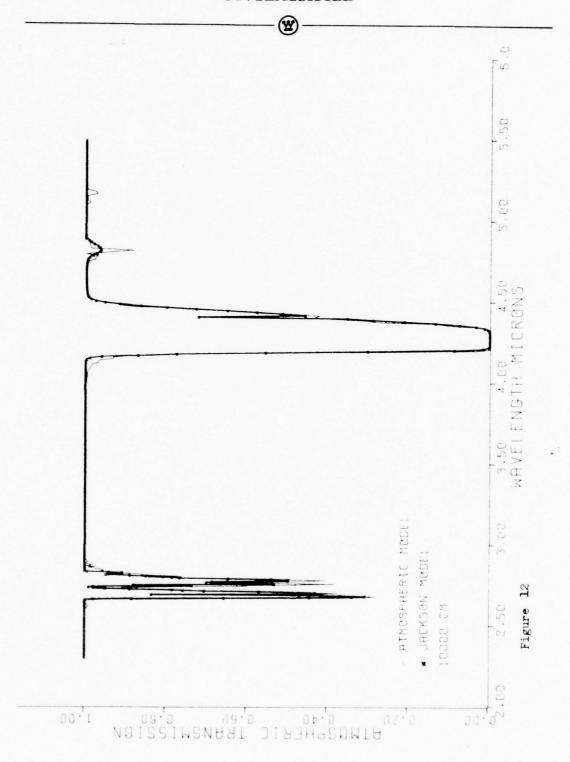
3-13 UNCLASSIFIED



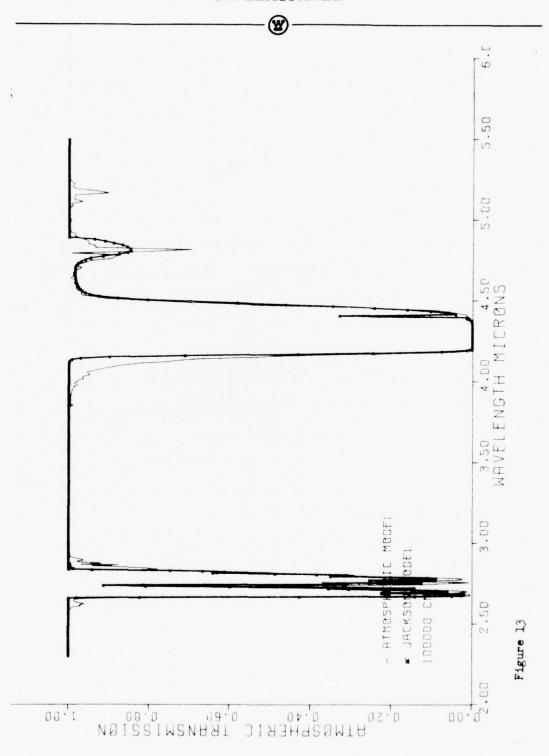
3-14



3-15



3-16



3-17 UNCLASSIFIED



Another CO<sub>2</sub> emission model has been proposed for this region by Ludwig as shown in Appendix I. This model was also run off against the "HIDE" transmission and is shown in Figures 14-17. Neither model shows an exact matchup and the final choice for the "HIDE" model was decided on the basis of the better signature generated which was due to Jackson.

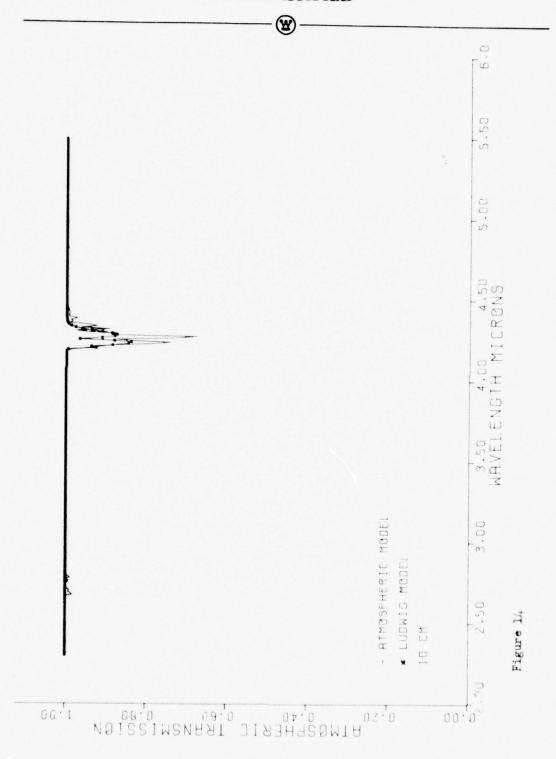
#### 3.6 Plume Radiation Validation

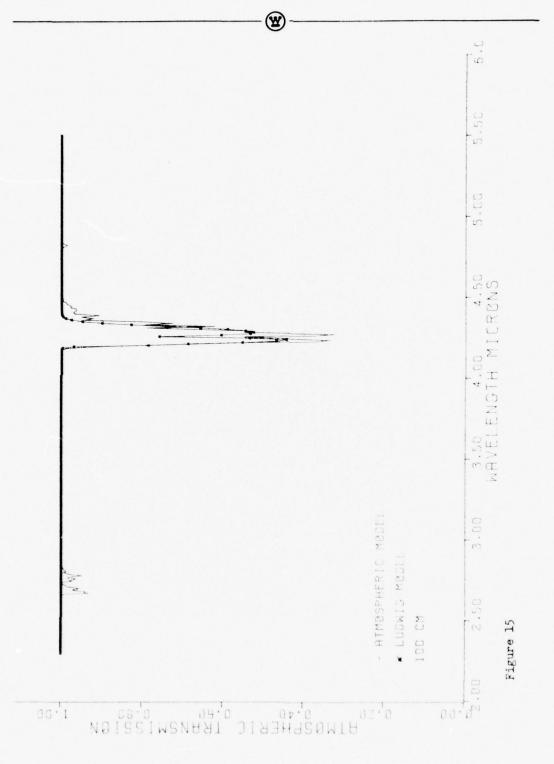
The Infrared Evaluation of a UHlH Helicopter, by General Dynamics, Ref.1, presented the results of some flight tests to measure the radiation from helicopters under varying meteorological and operating conditions. The end product of these tests appears as a series of graphs of Radiant intensity vs. wavelength for various aspect angles. To gain some confidence in the "HIDE" increased resolution models several of the G.D. plots were selected to form a signature and compared directly with the HIDE predictions. Excellent correlation was finally achieved after many iterations and the best of these predictions will be presented in this section. The actual methodology or engineering used to obtain such good validation will be explained in detail in another report on sensitivity and error analysis, Ref. 2, as it illuminates many important facets of the "HIDF" program.

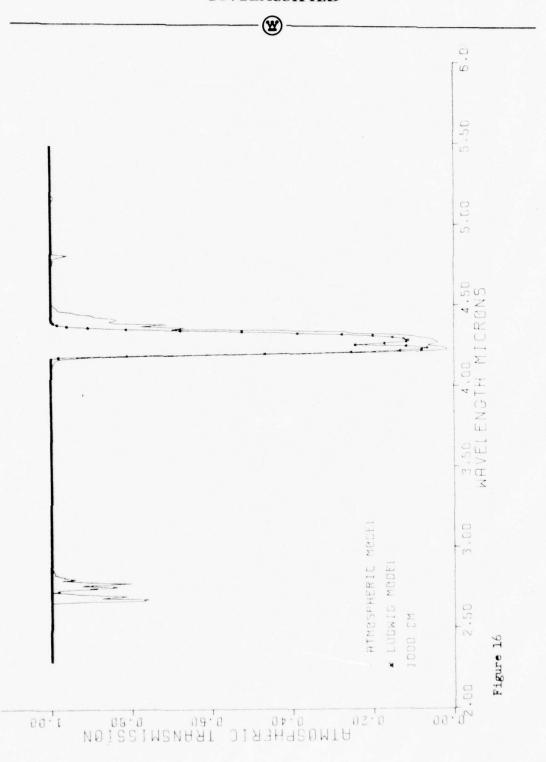
For security reasons, no description of the test conditions, the helicoptor, or even the scales of the graphs will be included in this report.

This data may be obtained from the G.D. report referenced earlier, Sec. 2.

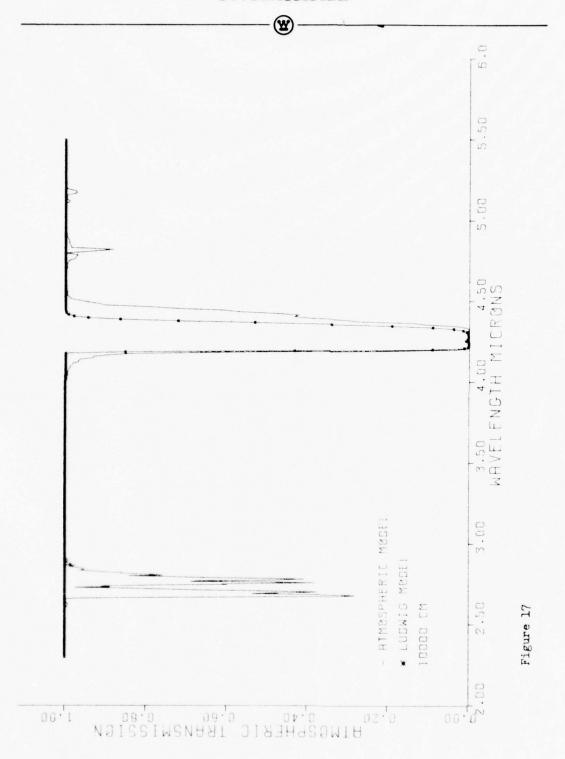
Figures 18-21 show the results of this study, four spectral plots of Radiant Intensity vs. wavelength for approximately co-altitude look angles of 134°, 196°, 270°, 312° degrees. These angles are measured clockwise looking down on the helicopter with zero degrees being head on. The HIDE output was traced in heavy black ink to make it distant from the G.D. original.







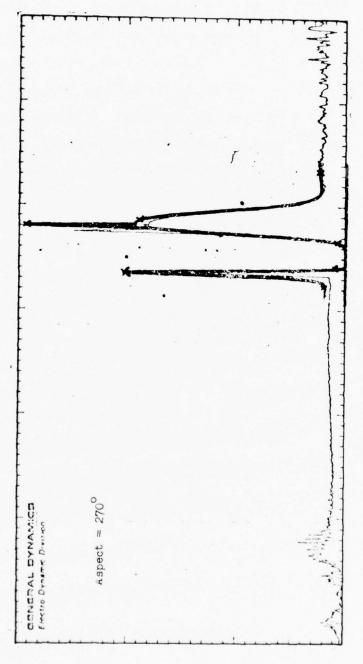
3-21



3-22



Although the wavelength band over which the "HIDE" oprogram was exercised is, small it represents IR contributions from all the major sources, i.e. tailpipe, boomheating, and plume radiation. In the region about 4.07  $\mu$  the transmission of water vapor and carbon dioxide is approximately unity, and thus the IR emission from the hot plume gasses must be zero (emmisivity = 1. - transmission). Hence from 4.05 μ to 4.13 µ the energy is due purely to the blackbody sources, and when viewed from all aspects a perfect match between measurement and prediction confirms the validity of the mathematical model. The double spikes at 4.2 and 4.4 µ represent the IR emmission from the hot carbon dioxide in the plume. Two things are of interest here in comparing the measurements and predictions. First of all the structure of the curves (excluding the magnitudes) is important in validating the emission and transmission models. They are widely varying in the region and must complement themselves exactly in order to obtain the proper shape of the radiance. Secondly the energy under these curves represent a good test for the plume velocity and temperature distribution models. Thus it can be seen that firuges 18-21 are somewhat favorable to the "HIDE" program. For a more complete validation study the report on Error and Sensitivity analysis of the Hide Program March 1974 should be referred to.



igure 18 "HIDE" Signature Prediction

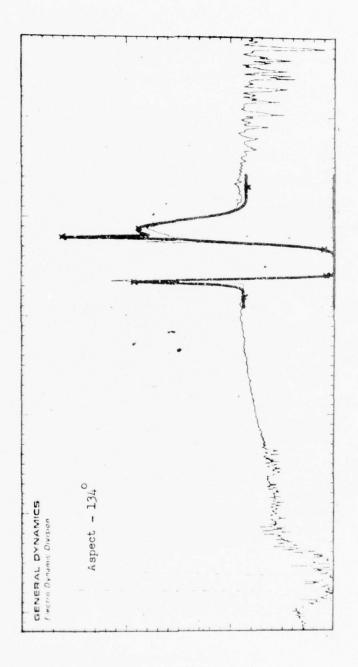


Figure 19 "HIDE" Signature Prediction

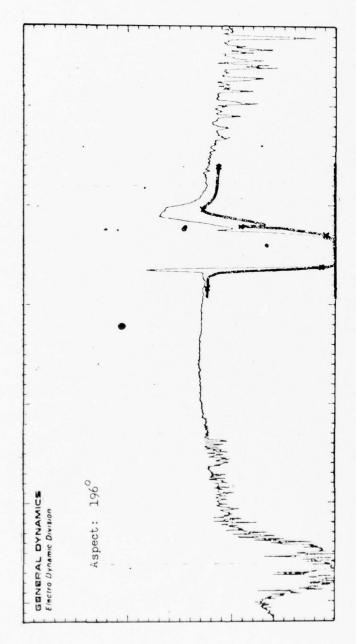


Figure 20 "HIDE" Signature Prediction

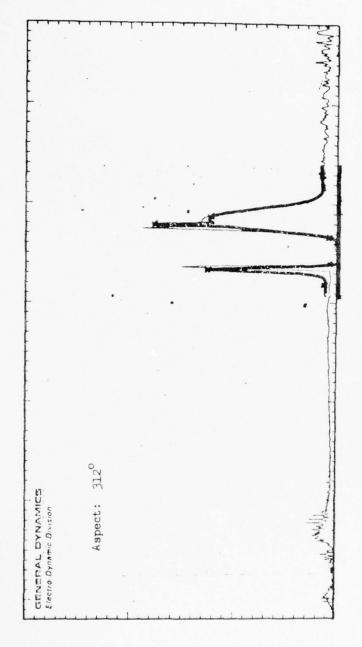


Figure 21 "HIDE" Signature Prediction



#### 4.0 BIBLIOGRAPHY

- REF 1 The Infrared Evaluation of a UHlH Helicopter With & Without Suppression Vol II Ganett Corporation 1972.
- REF 2. Error & Sensitivity Analysis of the "HIDE" Helicopter Infrared Simulation. Data Item A008, Addendum to: Evaluation of IR Countermeasures, Phase II HIDE Model, Final Technical Report Feb. 28, 1973, Westinghouse Electric Co.



#### APPENDIX A

### ATMOSPHERIC TRANSMISSION SOURCES

The Infrared Absorption of water vapor, carbon dioxide, ozone and nitrous oxide as compiled for the high resolution transmission model is given in this Appendix. For water vapor and carbon dioxide the actual values of transmission are presented along with the title page of the report from which they were extracted, whereas for  $0_3$  and  $N_{20}$  the coefficients A of the transmission equation:

$$T_i = e^{-A}i^{q}$$

q = quantity of absorber

T = transmission at wavelength i.

are listed.



SSD-TDR-62-127 - Volume III

INFRARED TRANSMISSION STUDIES

FINAL REPORT, VOLUME III

THE INFRARED ABSORPTION OF CARBON DIOXIDE

V. R. Stull P. J. Wyatt G. N. Plass

G. N. Plass

Contract No. AF 04(695)-96 Project No. 4479-730F Task No. 447904

as an extension to Contract No. AF 19(604)-7479

31 January 1963

Prepared for

SPACE SYSTEMS DIVISION AIR FORCE SYSTEMS COMMAND Los Angeles, California

as an extension to work sponsored by

GEOPHYSICS RESEARCH DIRECTORATE
AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
Office of Aerospace Research
United States Air Force
Bedford, Massachusetts

AEFONUTRONIC DIVISION FORD MOTOR COMPANY

Newport Beach, California

PRESSURF	
ATMOSPHERE	
8	
7	
DIOXIDE	
ARBON	

:	4		*****		*****	2222	21111	33333	33333	33333	32222	11111	22322			*****						33333	22222	32222	111111
	HIII	11111	HIII	HIII	11111	11111	11111	11111	HIII	11111	11111	11111	IIIII	11111	IIIII	!!!!!	IIIII	ши	11111	IIIII	fun	ши	11111	HIH	HHH
					11111	****				*****			HERER.					****			****				7.7.1.7.2
•	!!!!!	!!!!!	11111	!!!!!	11111	11111	11111	11111	11111	11111	11111	11111	11111	11111	11111	11111	*****	IIIII	11111	11111	11111	11111	11111	11111	HH
	22222		22222		Ш	22222				22222						FREEZE		****			****				
		****		***	11111				***				-							7	****		-		***
į	22222	22222	22222	11111	11111	11111	22222	22222	22222	11111	22222	33333		21111			22222	22222		22222	31311	22422		11111	21222
	22222					****	12111													****					22222
	11111	*****	11111	*****	11111	11111	11111	11111	11111	11111	11111	*****	11111	11111	11111	HH	11111	11111	шш	11111	11111	HIII	11111	11111	11111
1		****			11111					****					40000	****				****					
ı	22222		*****	33333	*****										22222									****	
i	32332	33333	22222			22222		131111	12222	23233	*****	21222		*****	22222	*****	*****		*****	*****	22223			22222	23222
2	11111	111111	11111	12111		1155	53555	55555	51511	33355	55555	55555	55155	silii	BEEEE	32325	55511	Hitt	stitt	11111	11111	11111	111111	11111	11111
	11111	!!!!!	!!!!!	*****	!!!!!	*****	:::::	*****	11111	11111	11111	11111	!!!!!	11111	11111	HHH	!!!!!	HH	11111	11111	*****	*****	11111	11111	11111
2	11111	11111	11111	11111	11111	*****	*****	11111	11111	11111	11111	11111	11111	11111	11111	11111	11111	ш	11111	11111	11111	11111	11111	11111	11111
-	11111	11111	11111	litti	Hiii	11111	11111	11111	11111	11111	*****	шш	11111	11111	11111	11111	11111	11111	HHH	11111	!!!!!		4111	*****	!!!!!
-	111111				HIII					22222	2222														
•					HH			****															*****		****
•	*****	*****	*****	*****	11111		*****	11111	2222					*****	22222	27327		*****	*****	44444	*****	*****	42222	22222	22222
				11111				33333				iiili						*****	44444	*****	44444				2000
•	!!!!!	!!!!!	11711	1155	!!!!!	!!!!!	Hilli	!!!!!	Hill	!!!!!	!!!!!	!!!!!	!!!!!	!!!!!	HHH	!!!!!	Hili	11111		!!!!!	11111	11111	!!!!!	11111	11111
1			*****		11111		*****								*****	*****					*****	*****			
1	11425	19155	*****	*****	11111 11111		*****			*****			*****			*****				*****	*****		11111		22222
•	22222	11111										12222											15111		
!					17111																				
i	11115	11111	1111	15111	11311			11111		!!!!!	!!!!!	1811	11111		11111	!!!!!		12125	11111	1111	155	1111	15111	21111	11111
9		iiiii	11111	iiiii	iiiii	iiiiii	iiiii	11111		Hili		11111		iiiii	Hi			Hili		iliji		iiil;	11121		
•																									
			••••		11111	*****	Unit	,,,,,,	nen		1::::	12:11	1:2:1	£2.842	1771:	21151	22541	Hill	11111	21111	11163	11111	*****	*****	11111
2	22222		22222		11111													*****				****	****		
•					11111																				
-		****		*****	RHI															*****					
•		****	*****	***	ittii (											****			*****			****		****	10000
•	-				11111				2222	2000															
	HIII	Hilli	Hill	litte	11111	1:11!	11111	1:11:	11111	11111	11111	11111	11111	*****	11111	11111	14512	1-111	51111	1111	11111	11111	Hill	Hill	illi
•	!!!!!				11111																				
ŧ	11111	****			1:4::							11111											11111		
1		*****		11111		****					****	11111	*****					*****		****					1911
*	*****		*	****	HIEL			10.44		*****	*****	11111		*****			*****						*****		141/5
*	11111	11111		11111	111		ini	11115	11111	11111	11111	11111	11111	1177	11111	11111	11111	11111	1111	11111	1111			1111	1111
1		*****			Hilli							1111													11533
2				niii	11111	11111	17231	11111					11111	Titte	EFFEE			HIEL	Hiti		11311	tille	11111	11111	10222

											The state of the s															
	:	11111 1111	2 2 2 2 3 3						2222				1000	22.2						1111		**				
	:	16607 1660	11111	11111	11111	11311	93818	1111	15111	11016	11111	11111	11111	11111	15.41	72411	1.511	11111	11111							
		*****	Hill															11123	*****				11111			
		11111 11111						war and			1200	20 20														
		(SIO 1011)	11111	11111	iiiii	illii	iiiii	11111	11111	11111	11111	11111	51771	11011	11111	11111	15556		11111	iiiii	iiiii	iiiii	iiiii	iiiii	iiiii	
		11111 11111																								
		211 III	11111	17511	11:11	Heff	itti	iiiiii	11111	*****	11111	11111	14111	11111	16663	11111	iiiii	iiiii	iiiii	iiiii	iiiii	iiiii	iiiii	iiiii	iiiii	
	5 1	11111 1111	1111		1111	11111		11111	11711	11111	15111	11555	11111	10011	15111	*****	*****	11111	!!!!!	11111	!!!!!	!!!!!	!!!!!	!!!!!	!!!!!	
	11	11511 (211)	11111	95556	!!!!!	26111	11111	11111	55006	14115			11111	****	11111	15111						!!!!!	!!!!!	!!!!!	!!!!!	
	1	11111 11111	11111	*****			****		11111		*****					11111				!!!!!			!!!!!			
	1	11111 11111					!!!!!	!!!!!		11111			••••	••••	••••		!!!!!!									
	I				19111		13111	10213	19111	11115	55155			51388 51388			11111			11111						
	i	\$1636 CARR								13515				11111			11111									
	1	ini ini					****							*****			****						11111	*****		
	ŧ	titil titi	111111	11111	11111	22222	11111	11111	11111	11111	11111	Sinii	25555	55555	11111	Estas	11111	22222	FEFFE	IIIII	22222	11111	11111	Eiiii	11111	
		11111 1111	1 11111	11111	11111	11111	11111	*****	!!!!!	11111	*****	*****	****	****	****	*****	18121	13311	*****	*****	*****	*****	11111	11111	11111	
35	2	*****			****	****						44444	13322	11111		23222	22222			22222			2222			
ATMOSPHERE PRESSURE	:	11111 1111	* 31111	****	****	*****	22223	****		****	****	11111	*****	iiiii	11138	11111	11111	****	*****	****	*****	11111	11111	HIII	11111	
4		HILL HIL			21222				23.52.5	W. C. C. C.		2000		Day and		22223	22222				33322					
HE SE	-	11111 1111			****							A		O verie	****		Contract.			2222	22123					
OS	•	11111 1111	1 11211	22222	23242	13111	22222	22222	20222	11111	27222		60606	00000	• 6 0 4 0		600	22222	11111		22222				2	
¥.	× 5 .	11111 1111	2 24222	22222	22222	1:1:2	11111	2.1.2		22.22				800.00			20000									
	3000°K	11111 1111	2 2 2 2 2 2 2	111111		12.2.2.2.2		913183				6	40.00		A 18 15 15 18								40400	22222	22222	
1.00	F = 1 1	11111 1111	1 11111			22222	4-1-1							****								*****	****		*****	
7	- ; !	11111 1111		28282		18111	*****	22822	11211	11111	FEE:18	22272	21511	12575	19711		11111	17111	HIH	11717	fifif		11111	1111		
DE	i	11111 1111	11111	!!!!!	11111	11111	11111	!!!!!	11111	Hill	11111	11111	11111		!	!!!!!	11111		11111		liii!	11111	1111	11235	11111	
CARBON DIOXIDE	1	fffff 1111				22322						22222			15115				!!!!!	11111	15516	1111	13151	1111	12111	
2	i	11111 1111																		11111						
Q S	1	1991 1991																						3535		
Š	1	me m	i iiiiii	filli	11111	11111	iiili	11111	ilili		iiiiii	iiiii	11111		iiiii	11111	Hill		iiili	iilii	Lecit	itti i	11:11	iilii	ilili	
																										-
	2	11111 1111		****	****	***	***	15 M H T 15	***	4.000		****						With Street, or		2222		* * * * * * * * * * * * * * * * * * * *				
	:	11111 1111		****	***	*****	****	***	***		**	4.1.1.1					35511	****		****	31122	22222	2222	****	22222	
	~	11111 11111	* *****	11111	*****	11111	*****	*12:1	11111	11111	#####	11111	*****	*****	51371	REELE	ERRIR	REELE	32325	11111	REELS		*1111	11111	11111	
		1111 1111	1 1111	11111	*****	11111	*****	11111	IIIXE	10111	11111	31151	818X2	11111	11211	11111	21111	11111	11111	15551	11111	11111	11111	11111	11111	
		11111 1111	1 21155	****	****	12111	1:111	15151	15211	HILL	88558	11111	11125	18525	8 E X   X	FEETE	\$11.52	23888	11111	\$ 8 X 2 E	11211	1111	11111	11111	*****	
	. 2	##### ####	1 20111	11111		22323		33333																	00101	
	ž :	11111 1111			4000			4-1-6-				*						4 12 12								
	5 5	11111 1111		41111		-4		2222	2000	*****					*****			2-3-2			22421			41111	2222	
	1	10001 100		No. of Co.														41212		2222			11811		11111	
	1	11111 1111																							11111	
	!	58255 BESS		****	4-515			24000													*					
		11121 1217	1 11111	*****	11111	11111	51111	****	11151	\$2×1	11700		1		1211		11111	11.62	1	11415		15115	1111	1111	11111	
	1	treet 1115	1 11111	11111	11111	11111	11111	11121	11111	181, 1	11111				311	1411	FREE	11711		111			1111	11111	12551	
	,	iili iiii					1999	11111		11111		11111	1111	1	Hill	11111	1000	1911	1666	11111	11711		11711			

PRESSURE
ATMOSPHERE
1.00
¥
DIOXIDE
ARBON

*	33333774	33333	100000	22111	*****			33333	*****	22222	33333	33333		22222	22222	22222	*****	11111	11111	111111	33333	22222	22222	32233	33323
	22222								11111			****	***	****		****		****	*****			****		****	****
9	11:11	1.111	*****	*****	11111	****	*****	11111	*****	*****	11111	11111	11111	11111	11111	11111	HIH	11111	11111	11111	11111	11111	HHH	11111	11111
	*****	11111	11111	*****	*****	11111	11111	11111	11111		*****	11111	****	*****	****	*****	*****	*****	шш	m	****	*****	HHH	HIH	11111
									11111																
4									*****																
5 1	*****									****	*****			****	****										
1		33333	11111	22222	22222				****	***			***				****	*****		***					****
٠,																									
	11111	11111	11111	11111	*****	****	11111	*****	11111	****	11111	!!!!!	*****	*****	11111	11111	11111	!!!!!	11111	IIIII	HIII	11111	11111	IIIII	11111
	11111	19115		10010	11111	22222	23222	10000	22223	22225	22222	****	22832	88555	2222	12221			11111	11111	11111	HIH	*****	HHH	11111
1									*****																
ı									38855																
Ĭ								44464		4-44-			-		4.000										
2	liiii	11111	*****	*****	11111	*****	*****	11111		11111	11111	11111	11111	12011	11111	11222	55222	22222	22222	11111	51222	22222	11111	55111	!!!!!
	*****	*****	*****	*****		****	*****	*****	*****	*****	*****	*****	*****	*****	****		****	*****			*****		*****	*****	*****
2							****	WHERE	*****		***	4 1 × × ×			****										
2	****	*****	****	***	W 10 10 10 10			****	11111				****		****	****	****				****		*****		
-	22222	22322	22222	22222	11111	22222	22222	22232	44222	11211	22222	22222	22222	20111	42222	12111	22222	21111	22222	77777	22222			2	22222
•		22222	*****		****			44.44	11111									****		22222			22222	22222	23223
•			****	*****	****			***	11111						****	****	*****				****	****		****	
	11111	11111	11111	11111	****	*****	*****	11111	11111	11111	11111	IIIII	11111	11111	11111	HIII	HHH	11111	11111	11111	11111	11111	11111	11111	Hill
	*****	HIII	HH	*****	HHH	****	****	****	*****	HHH	*****	HHH	m	*****	21111	mm	****	HHH	11111	*****	11111	****	****	mm	****
	IIIII	11111	HIII	*****	*****	****	****	Hiiii	11111	11111	ши	*****	IIIIi	****	*****	Hill	m	IIIII	11111	*****	11111	11111	HH	11111	HIII
	*****	****	****	*****	11111	****	*****	*****	11111	*****	11111	*****	*****	*****	*****	m	m	11111	*****	mi	um	m	*****	11111	11111
	*****	*****		*****	*****		*****	*****	*****	*****	*****		*****		****			11111		11111	*****	11111			11111
3 2					****			22222	E2282			*****													2222
1	22222	22222	31233	22222	22222		33333		*****	33333	33333	22222	22222	11111	33333	37112	33333		22222	22222	22222	20000	23222	22222	
į		*****			22222	22222	22222	22222	22222	22222	22222	22332	22222	13222	00000	22232	22222	22222	22222		22222	22222	22222	20122	
1		*****							12113	*****	****			44444		11111	22224						44244		
1									!!!!!																
1		11111	::::::	11111	10000	*****	*****	::::::	!!!!!	!!!!!	!!!!!	11111		!!!!!	11111	!	11111	Hill	!!!!!!	11111	11111	11111	11111	*****	11111
,	77777	22923	1222	3000	10000	21223	11111	11111	11111	11111	11111	11111	11111	11111	15257	11111			2000	2211	11111	iiiii	1997	11111	iiiii
ŧ		*****	*****	****	*****	~~~~	~~~~	****	~~~~	~~~~	~~~~	22242	EREEL	ELLLL	CEEEL	REELL	22622	LLILL	LLLL		LLLLL	****	FYEEL	****	
									*****		****														
2				11771			20000		11111		****		21222			22212					****				
2					11111		10000	22222	*****		2222	11111			23223			22242	****				40000		
-		*****		*****	2222			22222			22122	22222	22222	22222	2222				22222						
~				# 15 H 40 15	0.00				\$ \$ \$ \$ \$	****					22122				****	44414	M. W. M. M. A.				
	22222	44444	Addes		20000	*****		4	14111	4444							23322	20000							
	83211	1555	56145	10011	11111	11111	11111	iiiii	f 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	* 3 3 3 8	****	****	83188	11111	F= 5 2 8	****	11111	****	11111	51111	*****	****	HHH	*****	11111
£	11111	19911	93339	11111	19191	11111	11111	:::::	*****		11111		11111	11111	11111	11111	*****	Hill	11111	11111	11111	11111	11111	11111	HH
	Hill	11111	11111	11111	11111	25253	11111	16571	11111	11111	11111	11111	iiiii	11111	11111	11111	*****	*****	11111	11111	11111	11111	HH	Hiii	HIII
	12112	25163	21211	37793	35331	15713	13551	11111	11333	11111	11111	11111	11111	11111	Hiii	iffii	HHI	11111	*****	*****	11111	11111	11111	****	11111
3 -	*****	30040	11111	11:12	20022	1111			11111	11001	22455	14575	11712	33151	11777				11111			11811	11111		(1111)
1 2				****	20000	E 10 10 10 10	0.000		51554		***	****									****				
ğ	****	24444	44-44	RESER	Bill			SECTION ST	11111	11 11 41 11 41					4114 6 6					*****					****
ě			*****	****	****		10411		*****		*****			****			*****	*****						****	****
8			*****	11111	****		40.00	11111	****				***		3224	24064						****	*****		11111
8	43113	11111		*5111	11111	11711	1751	H	149		13011		1155		1.11		57.55								:!!!!
-	11111	11111	11551	HH		1111		-		1012			1111	181			11:11	1111	11101			11111	1		
	22.77						1000	1111	1411	42347	*****		2111		1377	777	isiri	11111	11111	13131	11111	11111	11111		11111
-							6.000										acett.	A.C. R. C.		*****	acced.	- exec		40002	

			1111 1111	1 11111	12222	11111	!!!!!	11111	11111	11111	11111	11111	11111	11111	1111	11111	11111	11111	11111	11111	11111	11111	11111	11111		*****
		Ca. At 173751	11111 1111 11111 1111 11111 1111	i 11111	INIE	11111	1111	11111	11111	11111	*****	15211	11111	:::::	*****	11111	11111	SILLE	11111	11111	*****	*****		1111	*****	iiiii
		# (*) # (*)			11111	23111	*****	10000	11111	11111	00000	00775	22222	11111	11111	10111	11111	11111	11111	11111	11111	11111		10000	11111	2222
		200 200		1 11111	11311		11111				11111		11111		11111				11111		11111 11111	2122	8 X X X X X X X X X X X X X X X X X X X	24 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	11111	X 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
									-	-		-		-			-	-	-	-		-	-			
4	RESSURE			1 11111	11111	11111	11123	11111	11111	11111	11111	11111	12:11	11111	11111	11111	11111	11111	11111	11111	11111	11111	11111	IIII	I I I I I	11111
	ALMUSPHERE PRESSURE			1 11111	11111	11111	18519	33151	12211	1111		11111	11111	11111	11111	11111	11111	11111	11111	IXXII	HHH	ELLER	11111	11111	11111	IIIII
9	300	2 2 2					11111	****					11111	11111		11111	iiiii		11111	HHI	11111		11111	HIH	11111	11111
	DE AT	W. A.L. W.					11111							ш.			1111		i i i fi	11111	1111				Hilli	iiii
	AKBON DIOXIDE	2000 2000	8888 1832 8888 1832 8888 1832				*****														19251					
	3	a diameter																								
			\$2200 \$630 \$3310 \$111 \$3311 \$111	1 11111	11111	11111	11111	18111				HIO Mill														1111
			1111 1111 1111 1111	11111	11111	11111	11111	HIII			11111		11111							11111	10101	11111	1111	Hill	HIH	
		Ca. At 17775.	11111 1111 11111 1111 11111 1111	1 (111)	11111	11111	11111	11111	HIH	Hill	11111	1.111	III.		Hill	11111	4111			13314	1111					
		* 27		1 11111	11111	11111	15011	11111				IIII.								1111						
		Se con tax	HILL HEL	1 11101																						
		741																								11174

:	1451 1555 155 1451 1555 1555			1 11111	22,122	#25 II	11111	3555				1511	11111	11111	****	*****	11111	15511	14413	51515	1911	99555
:	11111 11111 11111 11111 11111 11111 1111				#1511 11111		!!!!!	12315	53555	40300	\$5555 \$5355	10010	1911					1001 1001 1001 1001 1001 1001 1001 100	95555 95555	99999 99999		94999 95955
***	111111 11111 1111 111111 11111 1111 111111	11111	100 100 100 100 100 100 100 100 100 100	11111	11111	40000	15555	11111			£1135	33355		35555	11111	1271 1271 1271 1271 1271 1271 1271 1271	2012		11315	£5555		59555
8 20 Cm-1		111111	797 337 337 337 337 337 337 337 337 337				\$5555 5555 5555	15555 53555 53555							# 10 00 00 00 00 00 00 00 00 00 00 00 00	11111		11111	32222	100 100 100 100 100 100 100 100 100 100	11111	100 mm
RAGED OVE	11111 1111 1111 1111 1111 1111 1111 1111				11111								1111		31553	100 CAN		5555	53535		11111	1911
												-										
RESSURE					88815		4-11-11-11								55888 55888			****	*****		*****	****
ATMOSPHERE PRESSURE	\$5005 UNBOS USES		100 100 100 100 100 100 100 100 100 100	o wence	11505	100 May 100 Ma						11111		25222	95333	11111	55555		******	# 1 9 8 8 9 8 9 8 9 8 9 8 9 8 9 9 8 9 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		**************************************
1.00 ATMC			HH 118	e. Problem			11111		111111	MAN. W. M.		49490		1000	11111	55555	11111	100 100 100 100 100 100 100 100 100 100	13335	1111	25148	
7		9 19191 3			1355 5135 5135 5135						54543 56555 56555	15555	45333 45333 25324	3555	35555	11111	1111				19919 19919 19919	#### #### ####
CARBON DIOXIDE					11001	35355 55555 55555 53555						91111	15555 15555 45525	55855 15555 15555	18925 16555 16555	55555	1885	18185 18185				
CARB											1000	11121		11111			11101		11111	HH	mi	11111
:	#### #### #### ##### #################	1 11115		11111	11111	8 3 3 8 E	18811	*2525	E5898		11111		*****	51555	80848	17111	*****	*****	11111	##### 10000	88898 88486 88688	*****
	##### ##### ##### ##### ##### #### ##### ######			11111		100 100 100 100 100 100 100 100 100 100	11111	HILL			****	##### ##### #####	****			11111	11511			11111	99989 99989 99989	13339
	11111 11111 1111 11111 11111 1111 11111 11111 1111	IN WHITE IS			***			20000													20007	C - (\$100 H ).
1 1				14155 14151 14171										55533 55533 55655					19191			
1		38888			*****															15111 151 <b>11</b>	33533 <b>33</b> 533	99553 99535

the forest see at make a state want to the state of seasons of the state of the state of the state of the seasons of the state of the s

51.621.5324 3 ... N ... N

	2 8	1414	93855	1911	10000	92213	22822	11111	31515	\$55 <b>8</b> 5	48545	11011	84:35	11811	****	1111	15111	HH	15185	1111	HINE	1111	11111	11111	11111	10881
		4114	11111	11982	10001	STERR	23832	*****	12222	33353	*::33	33383		NAME OF	1611	HH	HH		11111		5137		12515	****	**55*	11111
		1355	10000	48888	335 <b>11</b>	11111	98999	19669	22222	######	14441	11111	22522	######			HIH	18888		11818	3585T	1111	65655	11111	11111	11118
		5544	12422	21223	98122	22222	#3555	55555	98888	22822	20232	10010	*****	****				11111	2000	21111			HH	11121	10741	19191
			****		11111	NAME.		# 3 5 5 5	33333	2-22-		*****	10 10 10 W W							THE REAL	11111	11811			****	22724
					****	ARRA-				33333							11111 E4418							Roser		
		1333	44044	33335	11111	13332	33333	19111	10000	11111	13331	33333	22222	11202	111111	20023	13111		Hill				11111	39223	11331	11111
	g 37.	9595	11111	99955	33333	13333	59355	99999	11111	19111	11111	99999		11111	93933		11111	:::6:	15333	11111	31555			13.75	1911	3333
*	2 3	25.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	35131	33533	11011	40000	22222	11111	11111	10111	10111		24251 24251	11111		19133	11115	1511		£1.51	11111		1191		11111
3		1111	28228	1111	11111	33511	33333	######################################	58885	12335	9999	51655	13335	19111	35551	*****		1100	13541	11111	19915		55958	\$11£.	11111	11111
_ 4		1111	*****	f1151	11511	20008	*****	233 <b>2</b> 5	33988	99999	19996	11111	11111	11111	11111	11111	16133	11019	15358	E1885	51165			11663	18281	ERROR
E				ARRAG.	****	CHARLES.	A	11111			2000	***	***				***		57715	11111		11111		11111		92301 98888
20								######################################																E2422	22232	
OVER				40000							*****					****	*****			*****		****				
0			****	****			*****	111111111111111111111111111111111111111					****					****			***	$\alpha = (1,0,0) \in M$		11:15	2000	
						****		11111		*****		****				*****			****		11555	10333		10133		10100
GE	1 3	3333		19335	34531	1335	33333	111111		33333		33333	11511			13551	11111	11111	11:00	33335	1111	1111	11111	15:15	11111	11111
VERAGED	. :	1777	17177	11111	17777	11111 11111	37117	11111	32123	11111	11111	11111	21777	11111	17111	11111	11111	11111	11111	11111	11111	*:*:*	11111	*****	35155	11111 11111
>		****				4.	*****				*****	24442			22234			*****	21211	22222	*****		11111		ELLEL	
-																										
								10000											11111		11111	19594	55155	11511	11111	35555
								11111						15111		22222	30,41		33553	30333	19313	11111	11111	11111	11111	15111
	1,000	3333	11111	20000	32333	33433	11511	20000	111111	33333	99999	99999	32353	33333	20100	111111	13333	11111	31333	11111	19913	53555	55353	85558	44100	44999
	. 3	1111	######################################	53553	14414	11111	E 8 3 3 3	11111	*****	33353	85555	# # # # # # # # # # # # # # # # # # #	33355	18555	13835	14111	33353	11111	16666	10000	11111	55548	11111	11111	****	44644
		2522	10000	35558	85353	35555	*****	*****	#####	81008	14444	83338	88885	10010	\$555E	HH	85555	iiii	10000	15115	11111	11111	88888			21135
	. "	3333	44444	11111	44444	11111	13555	11111	19222	14444	10000	11111	\$3555	55555	58665	16111	55555	11511	#### <b>#</b>	15553	35555	11111	13534	-	14545	11114
								14444									25555	22222	22000	22222	22222	\$5555		22222	*****	22222
×					12222											00000		20042	0.00					2223		
0	2				WHEN-	4444																				
T=300°	8							1000							-		4 -44					8.4				
- 1	3	1000	33111	28233	2011	227	22222		11111	11843	11111		11111		*****		1991	11111	31533	11001	11111	11111	11011	20082	#5555 5	FEFF
,	8		11161		10000				111111	13711	11111		11222			11111			11711	1111	111111	-	11111	22222	22000	11111
	8		10111	11111	11111							12111			55355	35355			5333	-	15555			2222	1999	
	8 8	15555		10111	11111					19111	2682 <b>5</b>	13535	55555	98888	3346	11111	13333	10000		11111	NESSE.	:::::		55555	-	FREES
	× -		13325	11111	33131						11111		11513				11000		11111	11111	10001	2555	75355	-	35533	13655
	2		13111	18382	11111						20000	22022				1701									22222	53633
	8	11111	11111							11111		22223						31515		#####	::::::	11111	11111			
	2	HAR						*****		11111 111111			51111								*****	11111	*****	*****	*****	51144
-	-							******		Market											*****		*****	*****	*****	51144
			21122	10000				*****		Market			51111								*****	11111	*****	*****	*****	51144
	2.3	18985					1000	*****	11111	2222	22215	12111	21777			1555		2222			11111	11111			1511	1111
	1.08 1.100						1000	9,000	11111	10000	######################################	12111					##### #####				11111				1511	1111
	1 64 63 Sets 1-48 late						1000	9,000		10000	######################################	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000					##### #####				11111				1511	1111
	2 1 64 82 00 1-00 1-00 1-00		124 14 11 14 14 14 14 14 14 14 14 14 14 14				1000	9,000	100 March 100 Ma	1 1774	200 March 1997 March 1	100 100 100 100 100 100 100 100 100 100					2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			2000	11111		**************************************	28888	11111 11111 111111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	1 1 1 61 83 10 100 100 100 100		124 14 11 14 14 14 14 14 14 14 14 14 14 14				1000	9,000									2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000 20000		### ### ### ### ### ### ### ### ### ##	**************************************		11111 11111 111111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	are soler hate to the following		124 14 11 14 14 14 14 14 14 14 14 14 14 14				1000	9,000	100 100 100 100 100 100 100 100 100 100								2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			2000	100 May 100 Ma	100 May 100 Ma	**************************************	28888	11111 11111 111111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	10 1 1 1 1 64 62 1 1-10 1-10 1-10 1-10 1-10 1-10 1-10 1-		124 14 11 14 14 14 14 14 14 14 14 14 14 14				1000	9,000												2000	100 May 100 Ma	### ### ### ### ### ### ### ### ### ##	**************************************	28888	11111 11111 111111	***************************************
W.	20 to 1 1 to 1 62		124 14 11 14 14 14 14 14 14 14 14 14 14 14				1000	9,000												2000	100 May 100 Ma	100 May 100 Ma	1900 March 2000 March	**************************************	11111 11111 111111	******
34.2.3	TOTAL COMPANY AND ADDRESS OF THE PARTY ADDRESS OF THE PARTY AND ADDRESS																The state of the s		######################################	2000	100 May 100 Ma	100 May 100 Ma	**************************************	**************************************	11111 11111 111111	***************************************
See At 17 PM	TOTAL COMPANY AND ADDRESS OF THE PARTY ADDRESS OF THE PARTY AND ADDRESS							9,000									The state of the s		######################################	2000	100 May 100 Ma	100 May 100 Ma	1900 March 2000 March	**************************************	11111 11111 111111	******
AND CA ALTERE	THE RESERVE THE RE																						100 March 2007 100 Ma			
Walle Can Al STPR	and the table of t				######################################																				######################################	
Window Can, Ad Spiriting	and the table of t				######################################																				######################################	
Wighter Can Al Illinia	1000 100 100 100 10 10 10 1 1 1 5.4 8 1 10.4 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		He was a second of the second																						***************************************	
Market by we work and we	not upon the two late of the up to 1 to					######################################																				
Britis for all attack	THE PROPERTY OF THE PROPERTY O					# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1																				
State on At 1775	seemen benow races take now to be at 20 or 1 a a a a a a a a a a a a a a a a a a																									
WANT DA AN UNIVERSITY	seemen benow races take now to be at 20 or 1 a a a a a a a a a a a a a a a a a a																									

CARBON DIOXIDE AT 1.00 ATMOSPHERE PRESSURE

3													,											
E													?		,									
0 6																								
Q 1																								
AVERAGED																								
¥_1																								
:	mm K	111 1111		38225	5 <b>8</b> 55 <b>8</b>	28225	28233	58555	35533	332	10161	21235	# 1 X & 1	255										
:																								
	3223																							4
-	10000												P. V. P. W. W.	W. M. 10										
	######################################											~~~~	0.00000											
	##### ##																					7. i-		-
٠.	22322 22																					t me		
300	******			*****	11144	11111		13111	38353	19331	20000	21717	2577 2577 2577 2577 2577 2577 2577 2577	111										
1	5333 <b>5</b> 53																							
1	17101			3.00						11111			11111											
	. 11111 11 11111 11																							
1	33333 33																							
i	33333 33										51811			123										
1														111										
-	*****								****															_
:	##### ##					****											****							90.
:	******																		20000					-
-	11111																							
	1919 11			11111										11111										
•	35535 55		9 99999														52535							
	2000																							
		322 3233 585 3595																						
5 2	*****																							
	35355 FE	<b>1</b> 11 1111			HH									Ulli					11/11	55555	11111	11111	33511	
1		101 101					31111																	
																						****		
1																								
2		910 1011	11111	42503		21111	15055	11111	22101	Erici			11111	SHIFT		11111	STITE	11111	11111	11111	11111	:::::	23133	4



SSD-TDR-62-127 - Volume II

#### INFRARED TRANSMISSION STUDIES

FINAL REPORT, VOLUME II

THE INFRARED ABSORPTION OF WATER VAPOR

P. J. Wyatt V. R. Stull G. N. Plass

Contract No. AF 04(695)-96 Project No. 4479-730F

as an extension to

Contract No. AF 19(604)-7479 Project No. 4479 Task No. 447904

20 September 1962

#### Prepared for

SPACE SYSTEMS DIVISION AIR FORCE SYSTEMS COMMAND Los Angeles, California

as an extension to work sponsored by

GEOPHYSICS RESEARCH DIRECTORATE
AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
Office of Aerospace Research
United States Air Force
Bedford, Massacnusetts

AERONUTRONIC DIVISION FORD MOTOR COMPANY

Newport Beach, California

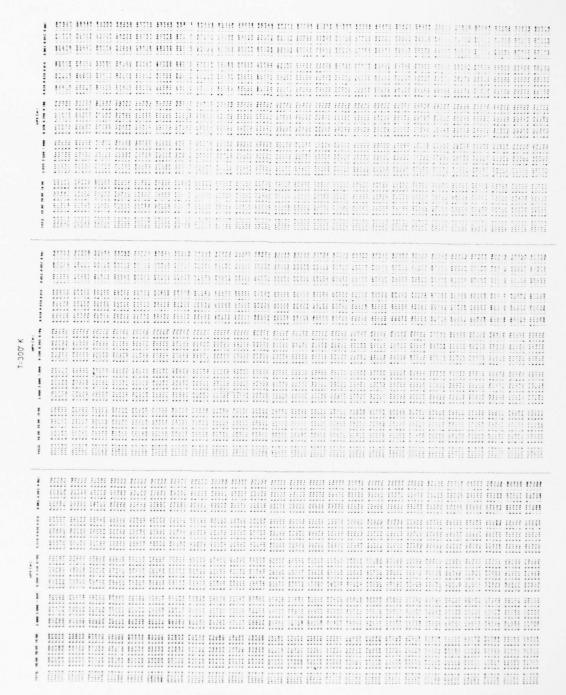


	*** (***																									
	***********			1111					1111		12111														1111	13111
5	M 4 300 4 2014										4													iiiii		
	2	1231   1331   1331		101					11111														1111		1111	
	51 08 SK 58 05				1 1111			1131			1333		11111	11111	11111			11111			11111	10002	11116	11111	115.1	1111
	0		iiii	ilii	1111	11111		Hili	1775				iiiii			11111	11111				iiiii	iiiii	iiiii			
	2 . (2 .												1111						2-100	11111						
				11111																		11111		11111		
T=300° K																										
	-	111			1315		11111				11111		11111		11111	11111	imi	11111	illii	11111	11111	11111			11111	
												11134 11133				11111		11111								
		2111	11141	11111	11111	11111	71111	HIII	1111) 11111 11111	11111	11111	11111	12222	HIII	11111	11111	11111	11111	11111		11111	HH	1111	1111	11111	11111
	= 1	1111	11111	11111	11111	11111	11111	Hill		Hilli	11111	11111	11111	11111	11111	11111	HHH					HEEL I		Hill		1111
į																							!:!!			
					!!!!!			Hill	11111																	
	:					1.00																			1111	

H2O AT 1.00 Atmosphere

A-11





H2O AT 1.00 Atmosphere





H2O AT 1.00 Atmosphere

A-13





H20 AT 1.00 Atmosphere

A-14



	******						11111	11111	11111	imi	11111	11111	11111	11111	11111	11111	11111	11111	11111	11:11		11111				
20cm <sup>-1</sup>	***********		!!!!!	11111	!!!!!		!!!!!						:::12													
	*** ***	11111	11111	11111	11111			1:::::	11111	12:11	:::::			::::::		11111	11111	11111						1111		
																					11111					
AVERAGED OVER	*************										1511			1522			1223	1111								
	*** (*** /***	11111	11111	H	11111	#1113 #1111 #1111	11111		11111	11111	11111	11111	11111	11111	11111		11111									
	*********																									
									*****												11111					
		11111		11111					11111																	
	***																								11111	
																						1111	1111	11111	11111 11111 11111	11111 11111 11111
33 6	********																		illi				1111	11111	11111	11111
	1													11111												
						*****			1111																	

H20 AT 1.00 Atmosphere

A-15





H2O at 1.00 Atmosphere A-16



The following two pages list, for completeness sake, the atmospheric absorption coefficients of  $\mathbf{0_3}$  and  $\mathbf{N_{20}}$ .

These numbers were obtained by curve fitting in the least mean squares sense the data found in: The Handbook of Military Infrared Technology; T.L. Altshuler, "Infrared Transmission and Background Radiation by Clear Atmosphere," General Electric Document, 61SD199 (1961).



	a <sub>N2</sub> O	<sup>a</sup> O <sub>3</sub> /		a <sub>N2</sub> O	<sup>a</sup> O <sub>3</sub>
1. 92	0	0	4.08	0.022199	0
1.96	0	0	4.16	0.012799	0
2	0	0	4.25	0.003499	0
2.04	0	0	4.35	0.011099	0
2.09	0	0	4.44	0.083499	0
2.13	0	0	4.55	0.430999	0.0332
2.17	0	0	4.65	0.019199	0.149
2.22	0	0	4.75	0.174999	0.178
2. 27	0	0	4.88	0	0.0825
2.32	0	0	5	0	0.0282
2.38	0	0	5.06	0	0
2.44	0	0	5. 12	0	0
2.5	0	0	5.19	0	0 .
2.57	0	0	5.26	0	0
2.64	0	0	5.33	0	0
2.7	0	0	5.4	0	0
2.78	0	0	5.48	0	0
2.86	0	0	5.56	0	0
2.9	0	0	5.68	0	0
2.94	0	0	5.71	0	0
2.98	0	0	5.79	0	0
3.03	0	0	5.88	0	0
3.08	0	0	5. 97	0	0
3.12	0	0	6.06	0	0
3.18	0	0	6.15	0	0
3.22	0	0 .	6.25	0	0
3.28	0	0	6.35	0	0
3.33	0	0	6.45	0	0
3.39	0	0	6.56	0	0
3.45	0	0	6.67	0	0
3.51	0	0	6.78	0	0
3.57	0	0	6.9	0	0
3.64	0	0	7.02	0	0
3.7	0	0	7.14	0	0
3.78	0	0	7.27	0	0
3.85	0.052099	0	7.4	0	0
3.92	0.072699	0	7.55	0	0
4	0.020199	0	7.7	0.018999	0
1	0.020177	U	7.85	0.227999	0
			8	0.074699	0

N<sub>20</sub> & O<sub>3</sub> Transmission Coefficients
A-18

	<sup>a</sup> N <sub>2</sub> O	a <sub>O3</sub>
8.16	0.000799	0
8.33	0.001499	0
8.56	0.034599	0
8.7	0.092199	0.0404
8.9	0.094299	0.055
9.1	0.000799	0.104
9.3	0	0.178
9.5	0	0.952
9.7	0	0.915
10	0	0.332
10.3	0	0.0459
10.5	0	0
10.8	0	0
11.1	0	0
11.5	0	0.00041
11.8	0	0.0308
12.2	0	0.00551
12.5	0	0.00771
12.9	0	0.0259
13.3	0	0.0441
13.8	0	0.0405
14.3	0	0.0296
14.8	0	0.0277
15.4	0	0.0145
16	0	0.00639
16.7	0	0.00041
17.4	0	0
18.2	0	0
19.1	0	0
20	0	0

 $N_{20}$  & 0 Transmission Coefficients

A-19



#### APPENDIX B

 ${
m H}_{20}$  and CO2 Transmission Data as Used in the "Hide" Program

This Appendix presents the water vapor and carbon dioxide data as extracted from Wyatt Plass and Stull, for use in the "Hide" program. The data is listed in tabular form as a function of wavenumber (CM<sup>-1</sup>) and quantity of absorber. The numbers under columns A and B are the coefficients of the curve fit:

$$T = \exp(-Aq^{-B})$$

as explained in Section 2.2.

B-1



	FRROR	0	6						0	-	O.		0	0	0	40	0	-	N	N	#	100	=	-	-	0	IC.	0	10	-	0	-	1	0	O	0		
	ii.	•	•	0.	0.	0.	.00	0.	.00	Ī	Ī	•	·	•	0.	Ī	•			Ī	Ī	. 1	.0	.0	.0	.00		.002		.0	0	0	-	.00	.13	.00	0.	0.
	α	.7100+00	.6500+00	.6700+00	.7100+00	.6600+00	.7300+00	.6700+00	.7400+00	.5900+00	.4800+00	.7300+0n	.6900+00	.7000+00	.7000+00	.6400+00	.6800+00	.6500+00	.7300+00	.6400+00	.5700+00	.7000+00	.7300+00	.7400+00	00+0069.	.6400+00	.6500+00	.7500+00	00+0069*	.7600+00	.7300+00	.7700+00	.8900+00	.8900+00	.6300+00	.7000+00	.1010+01	.8100+00
	•	.1448+00	.2798+00	.3863+00	00+626+0	.8092+00	.1029+01	.9317+00	.8638+00	.1732+01	.2021+01	.9235+00	.1013+01	00+06+8.	.7100+00	.6024+00	.3862+00	.2924+00	.1438+00	.1942+00	.5027+00	.8810-01	.6634-01	.6231-01	.9544-01	.6620-01	.5005-01	.1942-01	11755-01	.7359-02	.7014-02	.3720-02	.1054-02	.7822-03	.1326-01	.3656-02	.2046-03	. 9912-03
	00000	.980	.954	.914	.865	.780	.723	.739	.771	.423	.326	.738	.702	.741	.784	.842	168.	046.	196.	476.	.919	196.	.987	766.	986.	. 992	966.	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	.952	.897	.822	.741	.612	.533	.571	.600	.273	.204	.562	. 522	.574	.631	.714	.787	.868	.924	.938	.818	.918	696.	090.	. 965	616.	.980	\$66.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	106.	.814	.710	.608	.460	.354	.410	.428	.170	.135	.392	.357	.414	.487	.581	.685	.777	.861	.884	009.	.850	246.	.934	.934	096.	616.	.980	966.	866.	666.	1.000	1.000	1.000	666.	666.	1.000	1.000
	0000.0	.829	109.	.559	6443	.273	.179	.239	.241	.082	.073	.216	.195	. 565	.310	.420	045.	649.	,764	.793	. 522	.775	.895	.866	.881	.926	196.	096.	. 992	966.	066.	666.	666.	1.000	166.	866.	1.000	666.
RE	2.000.3	.654	.489	.325	.210	.091	.036	· 064	.054	.015	.014	.051	40.	.073	,113	.140	.313	044.	.582	.613	.291	.641	.795	.783	.764	.847	.911	.952	.981	.991	.984	666.	₩66.	666.	. 663	166.	866·	866.
MOSPHERE	00.0	474.	.286	.163	.079	.024	+00·	.012	600.	.001	.002	.007	.007	.014	.030	920.	.156	.272	.421	944.	.150	.531	.624	919.	.638	.755	.847	.910	.962	.982	.972	666.	166.	866.	.985	266.	166.	166.
.00. A	00.00	.289	.135	.054	.016	.003	0000	.001	.000	.000	.000	0000	.000	.001	.003	.017	.052	.129	.299	.200	.059	.489	.548	0.49.	.480	.635	.753	.840	.923	.963	.963	986.	166.	066.	.971	.985	666.	766.
TE 30	20.00	ħ60·	.026	*005	000*	0000	.000	0000	0000*	0000	0000.	.000	000.	.000	.000	000.	+00.	.023	. n79	.101	600.	.240	.320	.317	.243	.437	.582	.691	. 831	.910	. 955	.973	. 982	.985	.920	.961	.987	.986
DIOXIC	0.001	.022	400.	0000	0000.	0000	000.	0000	0000	.000	000.	0000	0000.	.000	000.	000.	0000	.003	.017	.027	.001	,116	.153	.154	660.	.279	.416	.531	. 704	.856	606.	196.	.963	.970	.868	.927	.973	026.
CARBON	0.002	500°	000.	.000	000.	000.	000.	.000	000.	*000	000.	0000	000.	000.	0000	000.	000*	0000	.001	* 00 °	0000	.033	£40.	940.	. 1123	.141	.239	.345	.532	009.	.818	.884	.921	. 937	.766	.868	146.	: 963
	0.000	.000	.000	.000	0000	.000	000	000.	.000	000.	0000	.000	000.	.000	.000	.000	.000	.000	.000	.000	000.	.001	.002	.002	.001	.030	040.	.129	12.	.439	.605	.727	.804	.836	. 500	.735	.868	.864
	.000.	.000	.000	.000	.000	.000	000.	.000	.000	.000	000.	*000	.000	.000	.000	*000	.000	.000	.000	*000	0000	.000	000.	0000.	000.	+00·	.011	.032	.122	.244	.394	.540	.548	969.	612.	.601	,764	.762
	2000.	.000	0000	.000	.000	* 000	.000	.000	.000	.000	000.	.000	*000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	0000.	.001	.003	.033	n60.	.102	.320	.327	.502	.215	064.	.615	.619
	.0000	.000	0000	.000	0000.	0000	0000	000.	.000	000*	.000	.000	.000	.000	*000	.000	*000	000.	.000	0000*	* 000	.000	.000	.000	0000	0000	0000	0000	.002	.000	.033	5 to to	.165	.212	.045	.240	.359	.374
	10000	.000	0000	* 000	0000.	.000	.000	0000	000.	0000	*000	0000	.000	* 000	0000	.000	.000	000.	0000	0000	000.	000.	0000	* 000	.000	* 000	.000	000.	.000	0000	.003	.014	.020	.059	.014	.100	.103	.179
	FRE'1.	625.	63:1.	63'11	640.	645.	650.	655.	*(199	.699	673.	675.	680.	68:3+	• 690	. 66.69	7007	70%	710.	715.	720.	725.	730.	735.	740.	74.1.	7511.	755.	1611.	765.	770.	77.	780.	785.	7901.	19%.	8011.	80%

B-2



	FRROR	.001	.001	000	.001			900	000	.001	.001	.018	.105	.001	.007	.001	.001	.001	000	.000	.000	.000	000.	.000	.000	000.	.005	.000	.000	000.	0000	000.	.000	.001	.001	.001	.001	.000
	α	.8200+00	8500+00	. A900+00	. 9200+00	8700+00	. R100+00	7300+00	.7400+00	.7400+00	.7700+00	.5700+00	. 4200+09	.7300+00	.7000+00	.6700+00	.6700+00	.7000+00	8000+00	.9800+00	.1110+01	.1100+01	.1060+01	.1020+01	.9300+00	.8500+00	.6200+00	.7600+00	. 7300+00	.7100+00	* 7300+00	.80000+00	.7300+00	.6700+00	.6700+00	00+0069.	.7400+00	00000000
	*	.8152-03	. 53A3-03	. 3397-03	. 280K-0x	. 4901-03	.7141-03	.1672-02	.1707-02	.2275-02	.2263-02	.1939-01	.5093-01	.1891-02	.2593-02	.3413-02	.2935-02	.1554-02	.4214-03	*4492-04	.8514-05	.8482-05	.1334-04	.2175-04	.5267-04	.1485-03	.1286-02	.5613-03	CO-14CD.	.9625-03	.0120-03	.2081-03	.4983-03	.1455-02	.1411-02	.1121-02	.5986-03	.6050-04
	0.200	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	1.000	1.000	1.000	1.000	1.600	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	966.	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	1.000	000.	1.000	1.000	1.000	1.000	1,000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	066.	166.	466.	1.000	666.	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	666.	666.	666	\$66.	. 993	666.	666.	666	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	1.000	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
FRE	5.000	666.	666	666	666.	666.	666.	866°	866.	166.	966.	.987	· 984	. 99A	166.	1660	1660	666.	666.	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	666.	***	666.		1.000	1.000	6660	666.	666.	666.	1.000
ATMOSPHER	10.00																			-	**	eri	944	-1	*					866.		-		866.		866.	•	1.000
000	20.00	366.	166.	966.	766.	966.	\$66.	. 993	166.	.987	.984	.952	. 939	.991	.988	.987	066.	\$66°	866.	666.	1.000	1.000	1.000	1.000	666.	566	666.	400	100	400	000	566.	666	966.	966.	166.	666.	666.
DE AT	50.00	686.	.992	166.	766.	.991	.989	186.	.978	696.	996.	. 889	.861	.978	.971	696.	.976	.987	766.	866.	666*	666.	666.	666.	666.	166.	666.	*	2000	766		66.	966.	066.	166.	266.	\$66.	666.
DIOXIDE	100.0	.975	.982	.987	186.	.981	.978	696	.957	246.	.935	.806	.763	.958	946	.941	.954	.975	.985	966*	866.	666.	866.	666.	166.	666.	166.	000	100	080	200	666.	166.	.981	.982	196.	686.	166.
CARBON	200.0	.952	196.	. 973	.971	.941	.956	.939	.920	.896	·850	.687	.635	.922	.902	.895	.915	.952	616.	. 993	166.	.997	966.	366.	766.	066.	.982	9,60	010	070	000	500		196.	965	016.	6/6.	166.
	500.0	.886	.911	.932	.928	106.	.901	.870	.840	.791	.760	667.	tt.	.837	.867	164.	.856	768.	.945	.981	166.	266"	166.	. 989	. 985	016	000	000	0 40	. 950	270	100	000	. 919	.921	. 930	166.	.986
	1000.	.791	.828	.860	.854	.823	.825	.725	.748	.679	.627	.356	.351	.742	.709	.695	.732	.821	.903	.962	.981	.982	616.	:975	.968	006.	025.	070	070	0.00	040	200	135.	.861	990	8.0	015.	216.
	2000.	.656	.706	.742	.726	.684	.708	.660	.619	.528	.453	.222	.262	.612	.583	.569	.613	.722	.831	.927	.965	196.	.959	036.	666.	906.	* 650	795	100	000		176		0//0	100	.800	0 10 0	646.
	5000.	.413	194.	.507	.473	.433	.491	044.	.395	.289	.203	.084	.164	.387	.349	.359	.412	.545	.675	.825	.897	906.	.895	5/00	.000	10.		.648	.662	.730	F C d	777	200	0000	1 + 9 +	7000	77/	9/9.
	100001	. 212	.260	.293	.252	.223	.290	.247	.211	.126	990.	.025	160 *	*208	.200	.196	.247	.377	.515	.689	161.	. 808	. 793	0//-	600	0600	2000	164.	.516	.602	721	200	100	0000	010.	420.	0000	101.
	FREG.	916	811.	820.	825	830.	835.	840.	945	850.	988	990				990	985.	891.	500	.006	.006	910	915				040	344	950.	955	960	96	010		.000			330.

B-3



	FPROR	000	.000	.000	.000	000	000	000	000	.001	.001	.006	.001	.001	.002	400.	.008	.002	.000	.077	.010	000	.001	.000	0000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	α	0700400	00+0066	004006	00+0066	.8600+00	7800+00	.7600+00	7100+00	00+0069.	.6700+00	.6200+00	.6600+00	.6700+00	.7100+00	.6600+00	6900+00	.6500+00	.6700+00	.6600+00	.7000+00	.8700+00	.1280+01	.1130+01	.1740+01	.2000+01	10+0005.	.10000-01	.10000-01	.10000-01	.1000-01	.1000-01	.1000-01	.1000-01	.1000-01	.10000-01	.1000-01	.1000-01
	4	20136-04	.1319-04	.1646-04	.3436-04	.7578-04	.2072-03	.3897-03	.9448-03	.1638-02	.2177-02	.4086-02	.3410-02	.3321-02	.1880-02	.2508-02	.2710-02	.5149-02	.4569-02	.4851-02	.2168-02	.2008-03	.3360-05	.7899-06	.3312-09	.9401-11	.9401-11	.0000	0000.	0000	0000.	0000.	00000	.0000	0000	0000	0000.	0000.
	00000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	÷	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000
	2.000 1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666	1.000	1.000	666	666.	666	666*	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	666.	6660	6660	666.	666.	666.	1.000	660*	866.	866.	666.	666.	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ERE	5.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666 *	6660	666*	166.	166.	166.	666.	666	166.	\$66.	966.	166.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ATMOSPHERE	10.00	1.000	1.000	1,000	1.000	1.000	1.000	666.	.998	166.	966.	\$66.	766°	166.	966.	666	466°	166.	. 991	766.	166.	666.	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000
00 ×	20.00	1.000	1.000	1.000	1.000	666.	666	6660	166.	466.	* 992	.989	.988	. 98R	266.	566.	.987	.982	. 983	. 985	766.	866°	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DE AT 1	50.00	666.	666.	666.	666.	666.	666.	966*	. 992	.986	. 981	476.	.971	.971	. 982	.988	046.	.954	.960	.979	. 985	966.	660.	1.000	1.000	1.000	1.000	1.000	1.000	0000	1.000	1.000	1.000	1.000	1.000	000.1	000.	1.000
DIOXI	100.0	866.	666.	666.	866.	166.	566.	. 991	.983	.973	* 965	.951	546.	546.	996.	.977	. 943	.019	. 924	345	.971	266.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000.1	1.000	1.000	000.	1.000
CAPBON	200.0	166.	* 998	166.	966.	h66 *	166.	.983	* 968	840 .	* 935	.912	* R82	. A91	* 936	.956	.897	. R59	*865	. A93	7700	. 984	166.	1.000	1.000	1.000	1.000	0000	1.000	0000 1	0000	000.1	000.	1.000	0000.	0000.	0000.	1.000
	500.0	.992	766.	466.	066.	.986	.978	.961	. 929	.890	. 869	.830	.813	.807	.864	.903	.801	044.	. 743	.781	*876	.961	266.	666	1.000	000.1	1.000	000.1	1.000	1.000	0000	00001	00001	1.000	0000	0000	1000	1.000
	1000.	.983	.988	.987	.980	.973	.958	.929	* 878	.821	964.	.762	.719	. 707	.775	* A33	.781	.623	.620	9999	.702	. 925	. 983	666.	1.000	000**	1 000	00001	000.	1 0000	000.	000.7	000.	1 200	0000	0000.	0000	000.
	2000.	1969	.977	.975	196	646	+ 924	.878	.806	.727	* 69B	.624	.596	.578	1991	.732	.576	* 482	* 469	* 502	.650	.861	. 965	166.	1.000	00001	0000	1.000	0000	00001	0000	0000.	000.1	0000 .	0000	0000	0000	1.000
	5000.	.919	046	.937	.907	.888	.848	.772	.666	.554	.520	124.	.390	196.	0777	* 386	*373	.272	*255	.208	*430	.712	.618	0000	666.	00001	1.000	0000	0000	1.000	0000	0000	0000 .	1.000	0000	0000	0000	7.000
	100001	.851	*887	* 883	*836	.813	* 763	*655	* 523	* 392	+ 5553	667.	977	. 4005	9/7:	976	. 413	.129	577	101	907.	1564	* 040	4/6.	166.	0000	1.000	0000	1.000	1.000	1.000	0000	0000	1.000	0000	1.000	1.000	0000
	FRE	995.	10001	100 2.	101).	1015.	1023.	1025.	1030.	1035.	104).	1040	1021.	1000	1001	1000	1071.	1070	1081.	1000		10424	11011		1111	1121	1125	1130	113	1140.	1177	1150	112	1160.	116	117	1175	

B-4



	ROBOR	un u	000.	000.	.000	000	0000	000.	000.	000.	000.	000.	000.	.000	0000	000.	.000	000.	000.	.000	.000	.000	000.	000.	.000	.000	.000	.000	.000	.000	000.	.000	.000	000.	.000	.000	.000	000.	.000
	a		.10000-01	.10000-01	.10000-01	.100001.	.10000-01	.10000-01	.10000-01	.1000-01	.10000-01	.1000-01	.1000-01	.10000-01	.1000-01	.10000-01	.10000-01	.10000-01	.10000-01	.10000-01	.100001.	.100001.	.10000-01	.100001.	.100001.	.1000-01	.10000-01	.10000-01	100001.	10000-01	100001.	100001"	.1000-01	.10000-01	.1000-01	.1000-01	.10000-01	.1000-01	.1000-01
	•	ď																																					
			0000.	00000	0000	.0000	0000	00000	00000	.0000	.0000	.0000	.0000	.0000	0000.	.0000	.0000	.0000	.0000	.0000	*0000	0000*	.0000	.0000	00000	.0000	.0000	.0000	00000	00000	.0000	.0000	.0000	.0000	.0000	*0000	.0000	00000	.0000
	0	006.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,	1.000	1.000	1.000	1.000	1,000	-	1.000	4	1.000	1.000	1.000	1.000		1.000	1.000	1.000	1.000
		005.0	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	ä	-	1.000		-	1.000	•~	-	1,000	•	ř	-1		1.000	-1	1,000	-	H	7	1,000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1.000
		1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-		1.000	-	-	-	911	1.000	**	***	e-4	611		-	-	1.000	1,000	1.000	1.000	-	1,000	1.000	1.000	1.000	1.000	1.000	1.000
	0	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-		1.000	1.000	1.000	**	1.		1.		1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1,000	1.000
ERE		2.000	1.000	1.000	1.000	1.000	1.000	1.000	1000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	***	-	-			-4	-	-		1.000
TMOSPH		10.00	1.000	1.000	1.000	1.000	1.000	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		1	1.000	1.000		-	1.000	1.000	1.000
1.00 A	¥	20.00	1.000	000	000	000	000	000	000	000	000	1.000	1.000	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1.000	-	-	1.000	1.000	1.000
DE AT	T=30	50.00	000	000	000	1 000	1 000	0000	1 0000	1.000	1 0000	1.000	1.000		1.000	1.000	1.000	1.000	1 000		-	-	-				-	-	-	-	-	-	-	-	-	1.000	1.000	1.000	1.000
DIOXI		100.0	000	000	000	000	0000	000	1.000	1.000	0000	1.000	000	000	1.000	1.000	1.000	000	1000	1 000	1.000	1.000	1.000	0000	0000			1.000	-			-		-		-			1.000
CARBON		500.0 200.0 100.0	1	000	0000	0000	0000.	0000.	0000	0000	1 0000	1.000	1 000	**	1000	000	1000		0000	000	1 000	1.000		1 000	1 000	0000		1.000	1.000	-	-	-	-	-	-	-	1.000	-	-
		20000	000	0000	0000	1.000	0000	1.000	1.000	1.000	1.000	7.000	000	000		000	000	٠.						000	4 .			-			4 -	-				-	-	1.000	1.000
		1000.	000	0000.	000.1	1.000	0000**	1.000	000.7	٠.		1.000	0000	1.000	1	1.000	000		1 0000				000	4	4 -			1.000		-	-		-	-		-		-	1.000
		2000.	000	000.1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	1000	000	000	1.000	0000	1.000	1 0000	4 -	4 +		1.000	1.000	٠.	4 =		000			-		4 **		4	1.000	1
		5000.		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	1.000	0000	000	0000	0000	1.000	1.000	4 .	٠.		٠.	٠.	1 * 000	0000	1.000					-					1.000	
		10000		1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	0000	0000	00001		i .	0000		0000	0000.	0000	1.000	1.000	1.000	000	000	0000	0000	1.000	1 000	1 000	1 000	1.000		1.000
		FREO.		1180.	1187	1190.	1195.	1500.	150,,	1510.	121%	12211.	166.	1530	163.			1521	1621	1071	1021			12811	1280	1621	1540.	1300		101	. 101	1 100	1 2 2		1 1 100	1 300	1350	1 1 1 1	1360.

B-5



	P FRROR	000	000	.000	000.	000.	000.	000.	000.	000.	000.	000.	0000	000.	.000	000*	.000	000.	000	.000	000*	0000*	.000	0000	000.	000.	000.	000.	000		000.	000.	000.	000.	000.	000.	000	~~~
	a	10000-01	.1000-01	10-0001.	.1000-01	.10000-01	.10000-01	.100001.	10000-01	100001.	.10000-01	.1000-01	.100001.	100001,	.10000-01	.1000-01	.1000-01	.1000-01	.1000-01	.10000-01	.1000-01	10000-01	.10000-01	.10000-01	.1000-01	.1000-01	10000-01	.1000-01	10-0001.	10-0001.	10-0001.	10-0001.	10-0001.	.1000-01	100001.	.1000-01	1010001	*******
	A	0000	0000.	.0000	.0000	.0000	.0000	00000	.0000	.0000	0000	0000.	0000.	.0000	.0000	.0000	.0000	.0000	0000	.0000	*0000	* 0000	.0000	.0000	.0000	.0000	.0000											
	00000	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	-	-	1,000	1.000		1.000	1.000	1.000	.,	÷	-	÷	-	÷	-	÷.	-1	<u>.</u>	1.000
	2.000 1.000 0.500	000		1.000	1.000	1.000	1.000		-	-	-	-		-	-	-		-	-	-	-	-	-	1.000	-		-	1.000	-	-			-	-	-	-	0 1.000	0 1.000
	1.000			1.000	1.000	1000	1.000						-	-							-		-		-	-	-	1.	-	1.	0 1,000	0 1.000	000.1000	0 1.000	-	0 1,000	0 1.00	00.1 0
	2.000			1.000	. 000	0000	000	* 000		-	-			4 -	4 -	٠,						-		4 -	4 -	-	-	1.000	1.000	000.1 0	000010	000.1 0	0001 0	***	-	-	-	0 1.000
FRE	5.000		1.000	1.000		٠.	٠.	1.000		٠,	1.000	٠.		٠.	٠.	٠.	1.000		٠.	1.000	-	4 -	-					-	-	-	1.000	-	-	-	-	-	-	-
ATMOSPHERE	10.00		1.000	1.000	1.000	1.000									1.000	٠.	. ·				1.000				1 0000			-	-			-	-			-		-
1.00 /	7=300 K		1.000	1,000	1.000	1.000	1.000	1.000	1.000						1.000	-			1	-	1,000	-		1.000	- ( -	-1 -	1.000							4 40			-	1.000
DIOXIDE AT			eri		1.000	1.000	1.000	1.000	1+000		1.000		. ·	-	-	-			-						4 -	4 -	1.000	-		-		-	-		-		-	-
DIOXI	0.00.0 0.000		1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	*	4	pril .	***	erd.	-	-	-	-1	-		-	erd o	1	1.0000	4 -	4 -						•			4 -
CAPBON	0.000		1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	24	***	-		-			1					1 000						٠.	•			
	500.0		1.000	1,000	1.000	1.000	1.000	1,000	1,000	1,000	1,000	1.000	1,000	**	****	-	-1	ď.	-	*	1.	7	-	1.		-	-	7.000	4 .	4 =		4 .	٠.	i.	1.000		-	
	1000	*000*	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	-	1.000	-1	-	-4	-	-	-	-4	.i.	4 .	1,000	-		٠.	٠.			1 000		
	0000	* 0002	1.000	1,000	1,000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	-	1,000	-	1.000	-	-	1.000	1,000	1.000	pri	++	-	-	-			٠.	å,	1.000	-4			-	001.000
	0	2000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1,000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	ve	1 .	-	-	p-4 -		*		*	1 .			٠.	0 1.000
		100001	1 000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.900	1.000	1.000	-	ord	1.000	1,000	1.000	1,000	1,000	1.000	1.000	*			-1	1,	. 1,000	1,000	. 1,000	1,000	٠.	. 1.000
		FREUM	377.1	11770	1 47	1 38 1	1 3 8 1	1301	1 30.	1401	1407	141.	1415	1423.	1425.	1431	1435.	1449.	1444	1451.	1487.	1467.	1465.	1471.	1475	148).	1485.	149).	1495.	1507.	1505.	1510	1515	1521	1523	153)	1535	154.1

B\_/



	FRROR	.000	.000	.000	.000	0000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	0000	.000	.000	0000	.000	.000	.000	000.	.000	.000	.000
	α	.1000-01	.10000-01	.10000-01	.1000-01	.10000-01	.1000-01	100001.	.10000-01	.10000-01	.10000-01	10000-01	100001.	10000-01	.100001.	.1000-01	.1000-01	.1000-01	.1000-01	.10000-01	.1000-01	.10000-01	.10000-01	10000-01	.10000-01	.1000-01	.100001.	.1000-01	.10000-01	.1000-01	.100001.	.10000-01	.10000-01	.1000-01	.10000-01	.10000-01	100001.	.10000-01
	•																																					
		.0000	00000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	0000	.0000	.0000	.0000	.0000	.0000	* 0000	.0000	.0000	.0000	.0000	.0000	00000	.0000	00000	.0000	.0000	.0000	.0000	.0000	.0000	* 0000	0000*	.0000	0000	.0000	* 0000	* 0000
	00000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	91		1.000	-	1.	1,	*		÷		1.	1.000	4	1,	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000
	0.500	1.000	1,000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000
	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.600	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ERE	2.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
TMOSPH	10.00	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1,000	1,000	1.000
4 00 ×	20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DE AT	50.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000
DIOXI	200.0 100.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
CAPBON	200.0	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	500.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	3.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	10001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.900	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000
	.0005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	10000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	FREQ.	1550.	1555.	1560.	1565.	1570.	1575.	1580.	1585.	1590.	1595.	1600.	1605.	1610.	1615.	1620.	1625,	1630.	1635.	1640.	1645.	1650.	1655.	1660.	1665.	1670.	1675.	1680.	1685.	1690.	1695.	1700.	1705.	1710.	1715.	1720.	1725.	1730.

B-7



	FRROR	.000	000.	000.	* 000	000	0000	000 *	0000	*000	0000	0000	* 000	.000	*000	0000	* 000	.000	000.	*000	0000	0000	0000	0000	000.	* 000	000.	.000	0000	0000	* 000	000'	.000	.001	000*	*013	000*	* 005
	CC.	.1000-01	10-0001.	.10000-01	.10000-01	.1000-01	.10000-01	.1000-01	100001,	.10000-01	.10000-01	.10000-01	,2000+01	*2000+01	*2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.2000401	,2000+01	,1510+01	*2000+01	10+0001,	,1650+01	.1470+01	,1240+01	,1230+D1	.1080+01	.8300+00	.9200+00	.1140+01	1900+00	.7600+00
	∢	00000	00000	00000	.0000	0000.	0000	.0000	00000	*0000	0000"	00000	.9401-11	.2823-10	.6601-10	.6601-10	*6601-10	01-5056	.1881-10	.1134-09	.1707-09	.6819-09	.6315-09	·2424-09	*2595-09	*1012-07	.3735-09	.2841-08	×1047-07	-9277-07	1354-05	*1779-05	*7762-05	-1356-03	.1137-03	.1830-04	.5015-03	.1021-02
	000.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	1.000
	0.500	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1,000		ni.	-	1.090	1,000	1,000	1.000	1.000	1.900	-	-	1,000	1.000
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.800	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	+1		1,000	1.0000	1,000	1.000	1,000	1.600	1,000	1,000	1,000	1,000	1.000	1,000	1.000	-	÷	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	<b>7</b> -1	mi.	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000
1E R E	5.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1,000	1,000	1,000	-	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.
TMOSPH	10.00	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	1,000	1.000	1.000	1,000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000		1.000	1,000	1,000	1,000	1,000	1.000	1.000	666.	066.	666.	. 998
1 .00 A	20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	-	+1	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.6000	1.000	1.000	1.000	1.000	1.000	666.	. 998	866.	166.	\$66.
DE AT	20,00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	~	1,000	-	-	-	*	+1	1.000	-4	1.000	1,000	1,000	-	-	1,000	2-5	1,000	1,000	3.000	666	866.	166.	\$66.	266.	. 982
DIOXI	100.0	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00001	1.000	1,000	1.000	1.000	1.000	1,000		1,000	1,000	1.000	1,000	666	666°	666	166.	ħ66.	.991	.987	.976
CAPBON	200.00	1.000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1,500	1.000	1,000	1.,000	1,000	666.	666	866.	866.	. 993	. 988	.982	,976	* 954
	500.n	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000		1.000	. 949	666	866	466.	.993	166"	.983	.970	4956	.039	.890
	1000.	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1.,000	1,000	-		-	1,000	1,000	-	1.000	1,000	1.000	,099	566.	#66B	4663	266"	066*	.989	. 967	146.	,916	. 830	*85n
	2000-	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	1.000	1,000	1.600	1.000	-	1.000	-	1,000	1.000	1,000	1,000	666	5664	866°	* 996	566°	* 986	.986	.977	.936	.889	.848	.816	.709
	5000.	1,000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.0000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	766"	666.	966.	200 *	1987	. 982	.975	875 "	.936	.920	*833	0 44 0	.801	+650	205.
	10000	1,000	1.000	1,000	1,000	1.000	1.880	1,000	1,000	1.000	1.000	1.000	666	166.	.993	1993	£66°	066"	866.	.988	.982	.930	. 935	×976	,973	, 989	. 963	4956×	5765	. 932	+884	.863	*852	.760	. 583	.503	* 487	. 331
	FRE 1.	1733.	1741.	17474	1757.	1753.	1767.	1765.	1773,	1775.	1783.	1785.	1797,	1795,	1807.	1805.	1813.	1815.	1820.	1823.	1830,	1835,	1840.	1845.	1850,	1855,	1863,	1865,	1873.	1875.	1880.	1885.	1897.	1895.	1303.	1905.	1910.	1915.



	FRROR	.047	. 00s	.049	.050	.001	.000	.001	.028	.001	.010	.001	000.	.000	.000	.000	0000	900.	.002	.000	000	0000	000.	.001	.005	.001	.002	.001	.002	.020	.008	.156	.276	.056	.287	600.	.226	2.151
	α	.9300+00	7100+00	700+00	.5500+00	.7200+00	.7100+00	.7200+00	00+006%	.8000+00	.6400+00	.80000+00	.1060+01	.1070401	.1090+01	.1070401.	,1010101,	.7800+00	.9100+00	.1050+01	.1020+01	,10000+01	.10000+01	00+0096*	.7900+00	.8600+00	.7500+00	.7700+00	.7300+00	.7600+00	.7300+00	.7200+00	*#600+00	.5300+00	.1420+01	*6200+00	.6700+00	.6600+00
	4	.3076-03	1201-02	.1418-01	.1557-01	.1317-02	.1250-02	.1066-02	.6625-02	.3237~03	01169-02	01772-03	*1584-04	·1394-04	.1167-04	*1535-04	·2784-04	*3786-03	.1760-03	*2598-04	50-960a°	.6165-04	,7158-04	.1201-03	.1152-02	*6650-03	.1931-02	.2884-02	.4012-02	.3475-02	.5294-02	.5547-02	.7420-01	.3628-01	.3452-04	.1539-01	.1195-01	.1154-01
	00000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	166.	866.	1.000	666.	6660	1.000
	0.500	1.000	1.000	1.000	6660	1,000	1,000	1.000	1.000	1,000	1,000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1,000	1.000	1,000	1,000	1,000	1.000	1,000	1,000	1,000	6660	666	666	666	. 993	966	666.	666.	966	666
	1.000	1.000	1,000	066	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666	866€	866°	.987	266	666	666"	166.	866.
	2.000	1.000	1 000	666	166.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1,000	666.	6660	6660	166.	966*	966*	166.	446.	.989	966"	. 993	166	. 993
ERE	5.000	060	000	. 997	€66.	6660	666	666.	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	666	6660	866°	\$66.	. 993	.991	066.	.993	.937	196	066.	. 987	\$ 55 E	666.
HOSOMI	10.00	999	900	266	.987	866.	866.	866.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666*	1.000	1.000	1.000	1.000	6660	666.	166*	566.	066.	.986	.983	.980	.986	. 883	.939	.980	.975	696 *	.985
1.00 A	20.00	100	900	986	476.	166°	.993	966.	166.	866.	666	666.	1.000	1.000	1.000	1.000	1.000	666.	666.	1.000	1.000	666.	6660	666.	.995	366.	.991	.980	.973	996.	.961	.972	.792	.878	.961	.860	. 941	.978
DE AT	50.00	700	100	. 967	.936	.989	686.	066.	. 992	\$66.	866.	8660	666.	6660	1.000	6660	6660	* 998	166.	666.	6660.	866°	866*	166.	.988	.987	.978	.953	.937	,924	.912	+634	,616	.706	.914	.820	.868	.931
DIOXI	100.0	00	0 0 0	938	.886	474.	.972	.980	. 989	166.	. 985	166.	866*	6660	666.	666	666.	966.	.993	866.	166.	966!	566.	466.	.976	476.	.957	.914	*888	.870	.850	.684	,412	.663	.832	464.	.774	.878
CARBON	200.0	.071	. 50	2000	.788	.939	.958	.968	.921	.985	.980	466	166.	8660	866.	866.	866.	666.	.987	466.	\$660	266.	166.	696 *	*934	646.	.921	64B.	.816	.792	.763	.607	* 353	.558	.766	.686	.634	.793
	500.0	540	000	789	.684	.867	806°	.915	. 914	.938	.971	.983	: 663	\$66.	\$66.	466.	466	. 982	196.	266.	.987	.981	.978	146.	.887	.879	.820	.709	.676	049.	. 598	195.	,238	.408	. 593	.486	904.	.618
	1000.	179	4 10	. 695	*453	*834	* B44	.858	.826	.926	996.	.971	+86.	.989	.987	.983	.962	.957	.925	+964	*957	776°	*935	.922	.779	.771	.707	*552	.529	.489	.439	*486	.170	+504	.427	.324	+233	.448
	.0002	776	110	244	.335	.738	.756	.770	.663	.881	.803	.927	.951	.955	.953	146.	116.	.839	+84th	.925	* 908	.882	*864	.842	.622	.621	.553	.368	*358	.363	.244	.298	.104	,137	.246	.177	.208	.263
	.0005	171		0000	.175	544	.585	.606	.651	.735	.743	.830	.871	*873	.877	.865	.859	.722	449.	.815	.779	.728	.692	.650	*365	.372	.311	.132	.138	*104	.075	+080*	.030	.037	.002	640.	.025	.012
	10000	210		1778	060	.368	.423	8448	.567	.601	*668	.763	.761	.769	.767	847.	.737	.619	695"	*99°	*613	.542	164.	.436	.193	*159	.147	.031	.035	.022	.012	.014	.005	*000	0000*	.000	0000	.011
	FREG.	1920.	1000	1940	1935.	1940.	1945.	1950.	1955.	1960.	1965.	1970.	1975.	1980.	1985.	1990.	1995.	2000.	2005.	2010,	2015.	2020.	2025.	2030.	2035.	2040.	2045.	2050.	2055.	2060.	2065.	2070.	2075.	2080.	2085.	2090.	2095.	2100.



		FRROR		200.	.00	.006	.003	.023	.063	.042	.001	.007	.001	.112	.001	. 046	000	8 F	900	9.0	070.	011.	000.	.001	500.	020	170	× 111	.025	. 142	.382	.008	.150	.002	1117	180	900	.065	1.173	.015
		α	00.00	* 7000+000	. 7800+00	.8500+00	.8900+00	*B0000+00	00+0006*	.8800+00	.9500+00	00+0066.	.9700+00	.1140+01	00+0066.	9500+00	1030+01	0500+00	1000+01	1020401		1050401	.0.0.0.	. 1010+01	.1030+01	00+0000	7900+00	.7500+00	.7500+00	. 8000+00	.6700+00	.7000+00	.6700+00	.7000+00	6500+00	.6800+00	7300+00	.7300+00	.5400+00	.7100+00
		٧	00-01-0	2010116	20-0/92.	20-4041.	·8129-03	.2113-02	.1056-02	.7447-03	.4390-03	.3348-03	.4215-03	.9295-04	.4042-03	.6546-03	.3303-03	.7637-03	.5514-03	.5176-03	E700-01	1474-00	8025-01	2010260	20000	30-2062.	.1365-01	.2352-01	.3514-01	.4047-01	.1090+00	.1424+00	.2270+00	.2475+00	.3457+00	.3929+00	.3569+00	.4003+00	.6319+00	.5656+00
		00000	000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000	1.000	000	000	000.1	1.000	666.	666.	666 *	666.	.987	096*	.930	.919	.910	006.	.891	.910	.839
		0.500	000	000	* * * * *	0000	1.000	1.000	1 . 000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	666	666.	666 *	666 *	.985	666.	* 975	.910	.850	.833	.807	.800	.787	.807	.763
		1.000	990	000		0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666	166.	666*	466€	.977	. 99B	.864	.841	.783	.741	.776	.750	.675	.776	.600
		2.000	, 00B	000	000		0000	666.	666.	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	I.nnn	1.000	1.000	000	666	866.	.993	. 987	126.	. 932	966.	.821	044.	.672	.413	.588	.541	.523	.581	.402
FRE		2.000	766	000	000	000	5660	2000	1660	1.000	1.000	666 *	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	. 999	, 99a	766.	.987	. 972	.932	*886	4660	.668	11000	944.	.401	.335	.314	.291	.241	.163
ATMOSPHERE		10.00	. 988	400	900	000	000	9000	466.	666*	666	6666	666.	666.	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	666 *	966.	166.	.988	.975	246.	.886	. 764	*854	564.	.373	.287	.229	.167	.149	.132	.091	.052
1.00	×	20.00	7760	.987	000	900	100	100	1000	555	* 998	866	. 998	6666	666	1.000	. 998	1.000	1.000	1.000	1.000	666.	166.	166.	.983	196"	.864	.874	.785	909.	0 .	.370	502.	.153	.095	.036	.042	.023	.019	600.
DE AT	T=30	20.00	.943	.967	. GAR	. 003	010	010	076.	0000	066.	186	* 986	166.	166.	466.	. 993	066 *	* 985	.981	.975	. 978	996 *	166°	.933	* 892	. 825	.710	. 529	1991	922.	* 108	200.	.022	.012	+000*	* 005	100.	.008	000.
VOIG !		100.0	.889	.937	. 441	970.	037	0.50	000	1000	216	116.	4/50	4/5 *	972	* 909	996*	. 962	. 957	.960	1 46 *	,931	.918	.889	.880	.734	*668	.520	.328	2/1.	5000	* 000	000	200.	100.	0000	0000	000.	0000	0000
CAPBON		200.0	. A14	. A79	. 900	. 933	898	2667	000	1000	0 0 0	606.	1 45	800.	906	000	* 925	. 915	* 885	*894	*880	.881	* A35	.887	.725	.608	974.	.303	0 4 0	000	020.			0000*	000.	000.	000.	000.	000.	*1100
		200.0	.636	.712	1921	.830	784	.703	0.10	0 0 0	0000	1 1 2 0 0	100	* * * * * * * * * * * * * * * * * * * *	1000	170.	0.000	.793	.748	* 83.4	* 700	.668	.621	. 553	7777.	.302	.112	000	200		1000	0000	000	000	000.	0000	0000	0000	0000	.00.
		10001	*453	.535	.622	.692	*606	. 534	. 769	780	100	1000	200	000	000	*00%	.650	579.	1964	0 10 10	*695	6443	.382	*365	*504	.103	500.	270	2000	0000	000	0000	000	000	0000	000.	000	0000	000	
		5000.	.261	,334	.416	6492	004.	. 341	. 520	200	621	1004	0000	2044	0/1	* * *		.300	* 228	. 24	557.	.145	.146	560.	5000	* 014	+00*	7000	000	000	000	000	000	000		000	0000		000.	100
	2000	*8006	*069	.108	.134	.197	,130	.127	. 223	23.6	200	100	27.0	103	1001	07.	CTT.	.088	000.	040.	620.	.017	* 000	*003	*001	*000	0000	0000	000	000	000	.000	000	000		0000	0000	000	.000	2000
	10000		.011	.023	*030	* 053	.037	.014	060.	.063	900	100	.032	1 400	017		0000	0000	*	200.	700*	* 0000	* 000	.000	.000	0000	0000	0000	000	000	.000	.000	.000	.000	000	*	000	.000	.000	,
	CHOL		2105.	2110.	2115.	21277.	2125.	21301.	2134.	2140.	2145	2150.	2155	2160.	2165	21711	2175	2180	0 4 0	01010	*****	4173	22001	55000	5211+	2222	2224	2237	2235.	2240.	2245.	2250,	2255.	2267.	2265.	2270.	2275.	2280.	2285.	



	α	32	0.0	90	44			100	10	50	101	*		100	000	000	000	000	900	108	44	101	100	900	000	187	100	001	025	100	.001	100	001	000	000	100	000
	FRROR	•	•					•																													
	α	00+0069*	80000+00	60000	6100+00	1100	00.000	00.00.00	00+0096*	. 8300+00	00+0099	1100+00	00+000%*	*****	00+0009*	00+0000	200000000000000000000000000000000000000	4800400	4500400	00+000	00+00+94	180040040	0040040	0500+00	00000	9200+00	.1010+01	.9800+0	.9300+00	.1010+0	00+0066.	.1000+0	00+0066.	.1000+01	.1010+01	.1030+0	.1000+0
	٨	.8945+00	RRR6+00	1712+01	3425401	********	0.05.04+0.1	.4020401	*6831+01	.6869+01	.6227+01	.6918+01	*5552+01	.5109+01	. 3813+U1	704666	1004404	4040400°	1041170	* 30000+01	1004101	00404000	00+0003*	10011101	9900-01	- PRES-01	1169-01	1066-01	.1128-01	. 5792-02	.5322-02	.4129-02	.3724-02	.2908-02	.2501-02	.1727-02	.1561-02
	00000	166.	704	2	2000	* *	.380	1000	.183	. 143	.117	.115	10.	.119	134	0000	1 40 .	040.	000	200	20.	100	0000	1000		1 000	4.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	005.0	.812	671	344	4000	0177	444	* 00%	. 041	* 024	0100	.014	.018	018	. 025	010	9000	*00*	170.	060.	8200	0000	2060	000	. 200	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000
	1.000	.626	101	0 0	9/1.	0/0.	. 041	.020	.001	.001	.002	.001	000	*007	.003	.001	.000	000.	200.	.028	. 184	667	4564	4995	6760	* 984	1000	9000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000
	2.000	238		.163	. 000	.014	+000	.002	0000	.000	0000	.000	*000	.000	0000	.000	.000	.000	0000	.000	* 078	.331	, 707	106.	555	. 464	016	0000	000	00%	998	1.000	1.000	1.000	1,000	1.000	*
	2.000	040	200	1/0.	* 000	.001	.000	*000	*000	0000	0000	.000	.000	.000	.030	.000	0000	*000	* 000	0000	*012	.133	* 485	.771	*824	8668	976.	646.	500	040	. 9AU	.987	066	166.	966.	866°	
	00.01	110	4 6	.003	.000	0000	000.	0000	000	.000	.000	.000	.000	.000	.000	0000	0000	.000	000.	000.	.001	.042	.288	. 597	. 730	. 803	000	. 685	116	104.	040	966	476	. 981	.985	. 987	-
	20.00	001	100	0000	000.	.000	.000	.000	000.	.000	000.	.000	.000	.000	.000	.000	0000	0000	000.	.000	.000	.007	.119	.364	. 5333	2490	+722	.781	.826	100.	. 000	100	0.37	000	.957	4965	
-	50.00	000	0000	*000	000.	0000	.000	.000	.000	0000	.000	0000	.000	000.	0000	0000	0000	* 000	.000	* 000	* 000	000*	.013	060.	.210	.331	0000	.538	.618	1000	1700		. 842	. R67	.887	n06.	
10000	100.0	000	* 000	.000	0000	0000	0000	000.	0000	000.	000	0000	0000	.000	0000	0000	0000	0000	0000	.000	0000	0000	.000	.010	940 .	.112	.147	.290	.381	001	2040	666	100	748	. 783	, 812	
NOONE.	200.00	000	• 000	.000	0000	.000	0000	0000	000	000	000	0000	.000	0000	0000	0000	0000	0000	000*	.000	000.	.000	.000	0000	.003	.013	040 .	.085	.146	.217	.291	0000	100	4 4 4	.611	.65A	-
,	500.003	0	0000.	.000	0000	0000	000	000	000.	.000	000	.000	.000	.000	.000	0000	0000.	.000	.000	.000	000.	0000	.000	*000	.000	*000	.000	.002	600.	.020	*0.0	100	175	220	066.	645	
	1000.		*000	*000	* 000	.000	000	.000	.000	.000	000	.000	.000	.000	.000	.000	0000	.000	.000	.000	.000	.000	.000	.000	.000	.000	*000	.000	000.	*001	-002	100.	040	100	. 085	.122	4 7 7 7
	2000.	0	.000	.000	0000	0000	000	000	000	000	000	000	.000	.000	.000	.000	.000	.000	.000	000.	.000	.000	0000	.000	.000	.000	*000	.000	.000	.000	.000	0000	000.	*00.	. 000	.013	,
	5000.		-	-																											0000						
	10000		0000*	.000	.000	.000	000	000	000	000		000	000	000	0000	.000	0000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	* 000	.000	* 000	0000	0000	0000		000	000
	FRE 3.		2290.	2295.	2300.	2305	2310	2315	2420	2426	2113	2335	2340.	2345	2350.	2355.	2360.	2365.	2370.	2375.	2380.	2385.	2390.	2395.	2400.	2405.	2410.	2415.	2450.	2425.	2430.	2433.	5440	5442	2000	2460	C-00-3



	ERROR	.00	100	200	***	000.	100.	220.	100.	.128	000.	*000	900.	0000	0000	*000	0000.	.000	.000	000	000.	000	000.	000.	.000	.110	000	.000	.000	.001	000.	000.	.000	+00.	*000	.012	000.	.001	000
	a:	00000	1000+01	0040000	10000	000000	00.000.	1040401.	1000010	00+00+6.	.10000+01	.10000+01	.1030+01	.10000+01	*1020+01	.100001.	.1010+01	.1010+01	.1010+01	.1010+01	.1010+01	1030+01	1010+01	1010101	.1010101	. A000+00	1020+01	.1020+01	.1020+01	.1040401	.1020+01	.1030+01	.1030+01	.1760+01	.1010+01	.8600+00	.1050+01	.1100+01	1060401
	∢	1265-02	1024-02	1501-02	7020-01	7586-0x	30000	. 55 × 0 × 0 ×	000000000000000000000000000000000000000	1900	50-0255	. 3962-03	.2672-03	.5192-03	.2428-03	.2591-03	.2148-03	*1943-03	.1763-03	.1602-03	.1460-03	.1103-03	.1217-03	.1117-03	.1029-03	.7246-03	.8043-04	.7388-04	*6707-04	.5112-04	.5753-04	+0-026+	.4548-04	.9346-07	.4568-04	.1778-03	.2652-04	1549-04	2061-04
	0000	1.000	1.000	1.000	1.000	1.000	000	1.000	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	1.000	1.000	1.000	1.000	1.000	1000	1.000		1 000	1.000	0000	0000	0000 .	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	0000	1000	0000 5	1.000	1.000	1000	1.000	1.000	*		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1 000	0000	0000	0000	0000	1.000	1.0000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	000.5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000	0000	1.000	0000 .	000.	1.000	1.000	1.000	1.000	1.000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	10.00	766.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	1 000	000	0000	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1 + 000	1.000	000.1	0000	1.000	1.000	1.000	1.000	0000 .	1.000	1.000
N C	20.00	.986	.988	066.	.993	966.	166.	. 99a	1.000	1.000	1.000	000	1.000	000	000	0000	1 + 000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00001	1.000	1.000
T=300	00.02 00.00	8 44 B	.956	* 965	* 968	.972	,977	. 982	. 986	. ORR	. 080	001	1000	900	000		966	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000 .	0000 +	0000 .	0000 .	0000	0000	0000	0000	1000	0000.
	100.00	.892	906.	.917	*927	.935	£46.	,951	.958	190	. 968	070	976	080	2000	000	- 100	705.	066*	266.	\$66.	966	166.	866	666	1.000	1,000	1,000	0000	0000	0000	0000	0000	1.000	0000	000.	0000	0000	1.000
900	0.1102	.793	. A17	* A3B	*856	.872	. AB6.	, 897	0000	010	. 92B	0.036	041	070	056	0.40	1050	000	000	* 972	. 975	476.	* 984	* 984	. 988	* 988	. 991	F) 0	065	400	1000		500	5550	00001	0000	0000	0000	000.7
0.003		,556	. 599	,638	*674	,704	,734	.760	, 784	*805	.824	. A4.1	. A55	. R69	. AA1	800	000	0000	176.	26.	75.	105.	. 934	546.	005	000	1960	2000	000	073	075	070	080	2000	000	000	100	100	
1000		* 30R	.358	.306	* 452	767.	+637	.675	.411	4644	*675	.703	.729	. 75x	.77t	.794	0.0	2760	. 200	* 1	* R55	* A0	* A 7 B	. 887	000	5000	175.	1000	120	011	100	270	080	033	040	.066	080	0.71	
2000		* 095	.128	.164	* 204	*245	*288	.330	.372	+414	454	664.	.529	. 564	. 596	.626	. 655	000	300	4700	. 72.	107.	+ 764	* 785	* 5001	. 010	. 000	7 0 0 0	. 966	874	BB1	000	800	100		100.	000	910	-
KAAA		.003	*000	.011	* 013	*030	* 044	* 062	*084	.110	.138	.189	.203	.238	.273	310	344	301	700.	0 0	0000	1000	410.	040.	.000	*60.	070.	670	.694	.710	725	743	.761	781	700	.813	. B27	B RO	-
10000		0000*	.000	.000	0000	.001	.001	+00*	*007	.012	.019	670.	*041	,054	.075	.095	110	1100	174	0000	202+	400%	100	102	* 700 *	3000	100.	7764	074	503	. 523	. 550	1357	.606	.633	.658	.680	.700	
EBF 3.		248.1.	2483.	. (6+2)	5442	2503.	2505.	2510.	2515.	2520.	2525.	2533.	2535.	2547.	2545.	2550.	2555	2861	256	2577	2077	00000		* 0 0 0 0 0	1000	2503		2611.	2615.	2623.	2625.	2631.	2635.	2641.	2643.	2651.	2655.	2661.	

N<sub>20</sub> & 0<sub>3</sub> Transmission Coefficients A-18

#### UNCLASSIFIED



714 - 500 - 304 - 377 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 - 347 -		R FRROR	•	•	.000	.000	.000	.000	.000	.000	.000	000.	.000	000.	000.	000.	000	.000	000.	.000	•	•	•	.000	.000	0000	000*	000*	000.	.000	000.	000.	000	000	.000	.000	
736 -860 - 2004   2006   2006   2006   2006   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007   2007		4	.1080+01	.1070+01	1080+01	1090+01	1100401	.1100+01	.1110+01	.1010+01	.1120+01	.1130+01	.1140+01	.1170+01	1190+011.	.1200+01	.1230+01	.1250+01	.1370+01	.1300+01	.1310+01	,1330+01	.2000401	.1380+01	.1400+01	.1440+01	.1450+01	.1490+01	.1530+01	.1580+01	.2000+01	0+07/11	10+0006	10000000	.2000+01	.2000+01	
736 669 -344 -377 -395   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000		4	.1618-04	.1617-04	1367-04	.1161-04	.9872-05	.9165-05	°77776-05	*1817-04	*6150-05	.5216-05	.4463-05	.3162-05	.2467-05	*2105-05	·1486-05	.1156-05	.3923~06	.6380-06	.5436-06	.4254-06	.8107-09	.2348-06	.1819-06	.1181-06	*9928-07	.6378-07	.4091-07	*2379-07	.6718-09	001000	3779-00	.3463-09	.3245-09	.3027-09	
7.14		0.200	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	1.000	1.000	1.000	1.000	
714			1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1.000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1.000	1,000	000	1.000	1,000	1.000	1,000	
714			1.000	1.		9-1	9-1	1 .	1 .	-	**	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1,000	I.000	1,000	1,000	1,000	1,000	1.000			0000	1.000	1.000	-	1.000	
736			1.0	-	1.000	1.000	1.660	1,000	1.000	1,000	1,000	2.000	0000	1,000	1,000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	0000	1.000	1,000	1.000	1,000	
7.14			1.	-	1.000	1.000	1.000	1.000	1.000	1	-		1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.		1.000	1 000	1.000	1,000	1.000	1.000	
714 .850 725 .669 .944 .977 .999 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1			-4		**	+1	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1,000	1.000		1.000	1.000		*	1.000						1,000	1,000	1,000	
714	X 00		1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	000	1.000	1,000	1.000	1.000	
714 .850 .934 .974 .994 .755 .865 .866 .944 .977 .996 .765 .866 .967 .968 .957 .997 .996 .876 .895 .995 .995 .995 .995 .995 .995 .995	703		1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.,000	1.0000	1.000		1.000	1.000	1,000	1.000	
714 .850 .934 .974 .994 .755 .865 .866 .944 .977 .996 .765 .866 .967 .968 .957 .997 .996 .876 .895 .995 .995 .995 .995 .995 .995 .995		100.0	1,000	1.000	1.000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	**	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.0000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	
10000 5000, 2000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000,			1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	0000	1.000	1.000	1.000	1.000	1.000	1.000	
714 6500 2000 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		500.0	666.	966.	166.	166.	666.	666.	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	000	1.000	1.000	1.000	1.000	1,000	1.000	
10000 7.144 7.534 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.654 7.			470.	1779.	.980	. 98 .	. 985	. 987	.989	. 991	. 992	. 997	566.	966.	1660	* 998	866"	* 999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-				1.000	1.000	1.000	1.000	1.000	1.000	
10000 1777 1777 1777 1777 1777 1777 177		2000.	.939	776.	.950	*95#	196.	.961	196*	746.	.970	. 972	+65ª	8 L 6 "	. 980	. 982	. 985	. 987	. 989	166.	266*	* 664	9660	.995	166.	. 997	866	8668	666.	0000	1.000	1.000	1.000	1,000	1.000	1.000	
		2000.	.850	.860	.869	.878	.886	. 893	006.	106.	.913	. 919	.924	.930	.935	6660	556	846.	.952	. 955	.958	,961	.985	196.	696	.972	.974	. 977		1000	0 80	. QR7	066	166.	.992	.993	
## ## ## ## ## ## ## ## ## ## ## ## ##		100001	.714	.736	.753	*76B	. 782	.796	.809	.820	.832	.843	*852	.861	* 869	.877	,885	*892	,889	* 905	, 911	* 916	,921	.926	. 931	.935	056.	346.	0 40	0.16	987	960	.963	996	.968	016*	
		FRED.	2665.	26711.	26711	2680.	2685.	26911.	26911	27011.	2705.	2710.	2715.	27211,	2725.	2730.	2735,	2740.	274124	27511.	2755.	27611 .	2764.	2770.	2775.	2780,	2787.	27911.	2000	2000	2810.	2811	2820.	2825.	2830.	2835.	



				CAPRON	CARRON DIOXIDE AT	0	0 x	ATMOSPHERE								
2000. 1000. 5		W.	500.n	200.00	100.0	20.00	20.00	10.00	5.000		2.000 1.00n 0.500 0.200	005.0	000.0	•	α	FRROR
1.000 1.000 1	1.000 1	gert	.000	1.000	1.000	1.000	1.000	•~	1.000	1.000	1.000	1.000	1.000	.2281-09	.2000+01	.000
.000 1.000 1.	400		000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1969-09	. 20000+01	.000
1.000 1	we	1.0	000	1.000	1.000	1.000	1.000	-	***	1.000	1.000	1.000	1.000	.1850-09	.2000401	.000
.000 1.000 1.0	1	1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.1658-09	.2000+01	0000
.000 1.000 1.0	1	1.0	000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	60-+++1.	. 20004-01	.000
000 1.000 1.0	1	1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.1230-09	.2000+01	.000
.non 1,non 1,n	1,	1,0	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	01-5556.	.2000+01	.000
.000 1.000 1.0		1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	. A#95-10	.2000+01	.000
. non thinn 1.0	-	1.0	000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.8495-10	.2000+01	.000
0.1 000 1.000 1.0	1	1.0	U00	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.6601-10	. 2000+01	.000
000 1.000 1.0	-	1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.5655-10	.2000+01	.000
.,000 1,000 1,0	-	1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	**	1.000	1.000	1.000	.4710-10	.2000+01	0000
1.00n 1.non 1.0	-	1.0	000°	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	.3766-10	.2000+01	000.
000 1.000 1.0	-	1.0	. non.	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.2823-10	.2000+01	0000
1.000 1.000 1.0	prof.	1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.1881-10	.2000+01	.000
0.1 000 1.00 1.0		1.0	000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	.1881-10	.2000+01	.000
1.000 1.000 1.000	-	1.00	0	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.1881-10	.2000+01	.000
1,000 1,000 1,00	1,	1.00	000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	.9401-11	.2000+01	.000
1.000 1.000 1.00	-	1.00	000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00000	.10000-01	0000
1,000 1,000 1,00		1.00	000	1.000	1,000	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	* 0000	.100001.	0000
0.1.000 1.000 1.00	1.	1.0	000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	00000	100001.	0000
1.000 1.000 1.0	-	1.0	000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	0000	.10000-01	.000
1.000 1.000 1.0	get	1.0	.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	,0000	.1000-01	*000
1.000 1.000 1.0	-	1.	000.	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.0000	100001.	.000
1.000 1.000 1.0	and.	1,0	000.	1,000	1.000	1.000	1.000		***	1.	1.000	1.000	1.000	0000.	.10000-01	.000
1.000 1.000 1.0	-	1.	.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	0000.	.1000-01	000
1.000 1.000 1.	1.000.1.		000	1.000	1.000	1.000	1.000	-	1.000	-	1.000	1.000	1.000	00000	100001.	000
1.000 I.non 1.	I.non I.	*	000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	.1000-01	0000
1.000 1.000 1.		- 1	000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	00000	100001.	.000
1.000 1.000 1.	-	1.	000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	.0000	.1000-01	.000
1.000 1.000 1.	44	unit	000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	0000.	.1000-01	.000
1.000 1.000 1.	1.000 1.	***	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	.100001.	000.
1.000 1.000 1.	-	-	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	10-0001.	000.
1.000 1.000 1.	1.000 1.		000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	-	.0000	.1000-01	.000
1.000 1.000 1.	1.000 1	-	000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	•	0000.	100001.	.000
1.000 1.000 1.0	1.000.1	-	.000	1,000	1.000	1.000	1.000	-	1.000	-	1.000	1.000	-	0000.	.1000-01	.000
1.000 1.000 1.0	-	1.0	000.	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	0000.	10000-01	000.



	ERROR	*000	0000	0000	000.	.000	0000	0000	000.	000.	000.	000.	000.	000.	000.	000.	0000	000.	.000	.000	000*	000.	.000	000.	000.	.000	.000	0000	.000	000.	000"	0000	000.	000*	0000	0000	
	α	.10000-01	100001	.1000-01	.1000-01	.10000-01	.1000-01	.1000-01	.10000-01	.10000-01	.1000-01	.1000-01	100001.	10000-01	,1000-01	.100001.	.10000-01	.10000-01	.1000-01	.10000-01	100001.	.10000-01	.10000-01	.10000-01	.10000-01	.10000-01	.1000-01	10000-01	100001.	.1000-01	10000-01	.1000-01	10000-01	*1000-01	*1000-01	*1000-01	1 0 0 0 0 0
	4	0000	0.0	0000	0.0	0000	00	0.0	0000	000	00	0000	001	0000	000	000	0000	0000	000	0000	000	000	000	000	000	000	000	000	000	000	000	0000	000	000	000	0000	
		•				•							•		٠							·	Ī	Ĭ	į				٠	•	*	•	•	•			
	00000	1.000	1.000	1.000	1.000	-		-		1	1	1.000		***	1,000	-	1	1,000	1,000	-	1,000	-1	-	1.000	1.000	1,000	1.000	1.000		91		-	**		1.000	1.000	
	0.500	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	**	1,000	1.000	1,000	1.000	1.000	1,000	-		1,000	**	1.		1,000	-		1,000	
	1,000	1.000	1.000	1.000	000	1.000	1.000	1 000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	
	2,000	000	000	000	000	000	000	000	000	000	1.000	1.000	1000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	
7	2.000.2	000	000	0000	0000	000	000	000	000	000	000	000	000	000	000	000	000	000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	
MUSPIE	10.00 5	000	0000	0000	0000	0000	0000	0000	000	000	0000	000	000	000	000	000	000	000	יטטט	000	000	000	000	000	000	000	0000	000	00001	1,000	1,000	00001	1.000	1.000	1.000	1.000	
. DU A.	20.00 1	000		7 000	1 000	1 000	0000	0000	000	0000	0000	000	000	0000	000	000	000	0000	000	000	000	000	000	000	000	000	000	000	000	000	000	.000	.000	0000*	000*	*000	
A .	50.00 20	000	1 000	0000	.000	. 000	1 000.	1 000*	1000	1 0000	0000	0000	0000	1 000	000	000	1 000	0000	000	1000	0000	000	0000	0000	000	000	000	000	000	.000	.000	0000	0000 1	0000 1	0000*1	000*1	
TOXIDS	100.0 5	000	7 000	1 000	0000	0000	1 000	1 000	000	1 000	000	0000	0000	000	0000	000	0000	1000	0000	1 000	000	2000	0000		000	0000	000	000	000	.000	000	0000	0000	0000	000*	.000	
RHON C	200.0 10		000	000	000	000	1 000	000	000	000	000	1 000	1 000	1 000	1 000	0000	1 000	000	0000	1 000	0000	000	1 0000	0000	1 000	000	000	000	000	. 000	000	.000	.000	.000	,000	.000.	
A O	500.0 20		.000.	.000	000 1.	.000	000 1	.000	.000	000	000	000	000	1 000	1 000	0000	0000	0000	0000	000	000	0000	1 0000	1 000	* 000*	1 000.	. 000	000	000	. 000	000	.000	1 000.	.000 1	.000.	.000.	
	1000. 50		4	000 1	000 1	000	000	000 1	0000	1 000	000	1 000	000.	1 000	000	7 000.	1 000.	1 000	1 0000	0000	1 0000	* 000 *	1 0000	7 000	000.	* 000*	0000	000	000.	0000	1000	0000	0000	.000	.000 1	. 000 .	
	2000, 10		000 7	000 1 .	000 1.	000	000	000	000	000	000	000	1 000	7 000	7 000	000	1 000	000	1000	000	0000	, 000	000	000	1 000	1 000	0000	0000	4 000	1000	000	1000	1000	1 000	.000 1	.000 1	
	5000, 20				000 1.	000 1.	000 1.	000 1.	000 1.	000 1.	000 1.	000 1.	000 1	000 1.	٠.		000	000	000	1 000	1 000	000	000	000	7 000	000	000	7 000	000	1 000	0000	1000	000	000	000 1	.000 1	
			4	-	**	000 1,0		-		**	000 1.0	-	, i		· ·	4.	4.	i.	÷ .	÷.	÷.	÷.	.i.				000	1 000		1 000		1 000	000	000	000 1.	000 1.	
	10000		1.00	1.00	1.00	1.00	1.04	1.0	1.0	1.0	1.01	1.0	1.0	1.0	1.0	1.0	1.0					:	-						:.								
	o Lace u	1	3035.	3040.	3045	3050.	3055.	3066.	3065.	3070.	3075.	3080	3081	3090	3005	3100.	3105	3110	3115	3120	315	313	3135	3140	3147	3150	3155	210	2100	37.75	175	3101	1011	X105.	3200	3200	



	ERROR	.000	.000	000.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	000	.000	.000	.000	.000	.000	.000	.000	.000	.000	0000.	00000	.001	.000	000.	000.	000.	.000	000.
	α	.1000-01	.1000-01	.1000-01	.10000-01	.10000-01	.1000-01	.1000-01	.10000-01	.10000-01	.1000-01	.1000-01	.1000-01	.10000-01	.2000+01	.1350+01	.1170+01	.1260+01	.1020+01	.1020+01	.1460+01	.1060+01	.1650+01	.1040+01	.1010101	.1010+01	.1010+01	.9300+00	.1030+01	,1340+01	.80000+00	.7100+00	.100001.	.8900+00	.9100+00	.9100+00	00+0066.
	4	.0000	00000	00000	0000.	.0000	.0000	.0000	00000	.0000	.0000	.0000	.0000	.0000	.9401-11	.8153-08	.6136-07	.4563-07	.5013-06	.5013-06	.8654-08	.2329-06	.1755-08	90-6869.	*3353-05	*2403-05	*1843-05	.6197-05	*4060-05	3494-06	+0-2006.	.1791-03	.2330-04	.8561-04	.8192-04	.7856-04	.2719-04
	00000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000			1.000	-	-	-	-	1.000
	2.000	1.000	-	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	÷		-	-	-	٠.	٦.	1.000
	5.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	-	1,000	1.000	1,000	1.000	-	-1	1.000	1.000	-	÷	-	1.000		1.000			-	-	÷	-	-	-	-	-	-	1.000
	10.00	-	-	H	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000	·	-	-	1.000	1.000	1,000	1,000	1.000	1.000	1.000		-	-	-	-	-	٠,	1.000
× 00	20.00	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1	-		•	•	•		066.
7=3(	20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.	1.000	1,000	1,000	1.000	1.000	1.000	1.000	-	*	666.	666.	. 998	. 998	866.	966.	666.
	100.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		,	1.000	1.000	1.000	1.000	1.000	1.000	1.000		•	6666	666	. 998	166.	966.	966.	0000	400
	200.0	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	6660 *	1.000	666.	866.	. 998	. 097	. 998	666.	.992	166.	266.	560.
	500.0	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	666	666.	666.	. 998	66.	966*	666.	066.	.980	.981	7.60	. 780	000
	1000.	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000	*		1.000	-	1 .	*	* 998	166.	* 998	966*	166.	. 991	. 988	. 981	616.	1961	8000	000	4/6.
	2000.	1,000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1,000	666*	666*	6660	666	666	6666 *	6664	. 998	. 991	\$66.	966.	. 993	. 488	. 981	.973	.963	966	.928	026.	026.	700
	5000.	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	6660	666.	.998	166.	. 997	866	* 998	* 998	* 995	* 982	. 987	066.	+ 983	116.	.978	1000	.912	299.	. 840	020.	0000	. 000
	10000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	666 *	866*	166.	* 995	566°	356 "	766.	966.	055.	066*	, 964	4974	. 980	. 908	1 46 .	. 961	1917	. 830	174	. 100	211	700	. 800
	FREC.	3221.	3225.	3230 +	3235.	3240 .	3245.	3256 .	325	3261 .	3265.	3276.	3275.	3280.	328.	3290.	3295.	3300.	330%.	3310.	3315.	3320.	3323.	5550.	3335,	3340.	3345.	*1000	*0000	1000	0000		4100		4400	* 101	3400



	FRROR	000	000.	000.	000.	000.	000	000.	000*	010.	.036	.012	100.	220.	0000	200	040	.365	. 733	. 902	.012	.003	.013	*00*	190.	.013	.172	.015	. 022	.071	.024	.030	.032	.031	. 552	*00°	.011	.001
	ď	00+00+6"	00+0006*	00+0066	00+0006.	.9200+00	. 8500+00	00+0062	*7100+00	00+0099	00+0049	00+0099	00+0011	00+0008"	00+00+1	.6700+00	00+0069*	00+00+6.	.66500+00	" 8000+00	.7200+00	.7100+00	00+0069"	.7100+00	.7000+00	.7400+00	.6800+00	00+0069*	00+0069.	.6500+00	00+0069°	.6700+00	*6600+00	.6500+00	.8300+00	.7100+00	*6800+00	.6800+00
	4	.5641-04	.1035-03	*8600-04	*0-6296	*8878-04	.2549-03	. 7280-03	*1427-02	*2873-02	. 5375-02	3929-02	*1685-02	1293-02	20-150c+	1491-02	1745-02	*1172-02	-1342-01	.3732-02	.9136-02	1255-01	.1947-01	.1881-01	.2211-01	.1527-01	.2645-01	.3648-01	.4546-01	.7058-01	.6681-01	. 8639-01	.1150+00	.1300+00	.6516-01	.1188+00	1596+00	.2172+00
	0.200	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	666.	666 *	866.	* 998	866.	666.	6660	166.	1660.	166.	466	.992	.986	.986	.982	.980	196.	. 947
	0.500	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	6666	666	666	666	666	866	166.	966	966	966	760.	166	. 993	166.	. 989	986	,981	.972	. 965	.956	.952	.926	.886
	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	666	666 "	1.000	1.000	566.	0660	066.	866°	. 99R	866°	166.	866	666	166"	666.	766	4994	.987	.983	.978	.972	.963	7776 "	.932	.915	.910	.871	.812
	2,000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	666.	666	666	6660	666	666.	6666.	866.	166.	1660	966	\$66.	266	066	.985	.983	984	.989	\$66	470.	,967	,958	540.	426.	.895	,874	. 845	. 840	.790	.709
	2.000	1.000	1.000	1,000	1,000	1.000	1,000	666	666	866°	166.	166"	866°	866°	166.	\$66.	:66.	666.	166.	. 988	.984	.975	. 964	. 959	.961	. 973	.970	. 93A	.920	.899	.872	.837	.775	.737	1691	.689	.634	,523
1	10.00	1.000	666	1.000	1.000	066	666.	866.	166"	966	\$66*	766	\$660	966"	166.	066	.986	486.	.982	.976	696.	.951	931	. 924	756	740	. 942	.883	.851	.814	.770	.718	.629	.586	,534	.534	.476	,352
	00.00	066.	666.	666.	666.	666.	866.	166.	766.	.992	.989	.989	066.	.993	.981	476.	.972	.968	.965	.954	1000	.911	B7R	. A66	860	.00	.890	.791	.738	.679	.61A	.555	.454	.411	.363	.359	.297	.187
4140	50,00	866.	166.	1000	866.	766.	966.	.992	.986	.980	476.	.973	,976	.982	.968	.950	.936	, 924	.913	895	. A74	. A21	764	745	747	780	.764	665	517	434	366	,306	.217	.180	.157	.146	. n99	440.
10000	100.0	966	360	366	966	266	166.	, 984	.973	.961	. 951	846	.954	396*	.938	. 903	879	.858	E48.	. A16	. 792	.720	643	617	407	8 5 4 ·	613	414	. 327	740	191	. 145	.086	.069	.093	540.	.024	.007
CARBOIN	200.0	. 992	080	066.	160.	066.	.983	696.	546.	.920	. 911	. 905	.914	. 932	.863	. A26	. A77	.769	.72A	.701	. K7B	F. B.	. ti Ru	200	2 4 4	1176	426	. 233	.161	101	.073	940.	.021	.01R	.004	.006	.00%	.000
	500.0	.981	975	979	978	. 975	.960	.930	168.	868.	. B24	.811	.817	. B78	.752	553	578	673.	F13.	.492	. 471	088	SUC	2014	106	217	1117	0.00	.035	.016	BOO.	P00.	.001	.000	.000	.000	.000	.000
	1000.	. 963	. 051	.952	. 0377	. 951	. 925	. A77	.820	.709	. 729	.707	.702	.776	.601	.487	75K.	. 357	110	107	383	186	000	0011	0100	0000		200	900	000	000	.000	.000	.000	.000	.000	000	.000
	2000.	000	200	006	1017	90B	. 867	790	.723	.635	. 60B	.510	546	. 507	.414	299.8	210	101	071	143	113	0.630	200.	030.	040*	110.	* 010	000	000	000	000	.000	.000	.000	.000	000.	000	.000
	.0000	100	000	780	0.0	708	787	. 548	546	461	300	330	307	310	179	101	080	000	010	24.00	200	4000	000	1004	0000	0000	0000	0000			0000	000	.000	000	000	.000	000	0000
	100001	733	277	643	200	0.00	0 00	FR.	374	285	213	1 8 2	.000	130	190	000	010	001	000	0000	300	* 000	0000	0000	* 0000	0000	0000	000	0000			000	000	000	0000	000	0000	.000
	FREG.	*1005	****	2011	2000	3450	345.34	30 34	4440	344	345	345	3460.	3465	1470.	37.75	44.80	200	41000	1011			*****	3510+	3510.	3520.	3353		1000	4500	1000	1555	1560.	1565	45.70	100	358	3585.



	FRROR	.004	.159	.001	.001	.001	1000	.190	2.169	.016	.020	.021	160.	.022	1000	600.	.186	.136	.014	.020	.001	.015	.016	.001	.001	.001	700°	000.	.002	.001	.001	.117	.028	.029	.023	+00.	.001	.001
	α	.6600+00	.6100+00	.6800+00	.6800+00	.6600+00	.6800+00	.6400+00	.7300+00	.6600+00	.7000+00	.6300+00	.7000+00	.7500+00	.8500+00	.7300+00	.1240+01	.7100+00	.6700+00	.7400+00	.7200+00	.7000+00	.6800+00	.6700+00	.6600+00	.6800+00	.6700+00	.6500+00	.6500+00	.6600+00	.6500+00	.5700+00	00+00+9.	.6300+00	.7500+00	.8300+00	.9800+00	00+0026.
	4	.3314+00	.4428+00	.3583+00	.3020+00	.1881+00	.1687+00	.3569+00	.4141+00	.3287+00	.2177+00	*5476+00	.1098+00	.6505-01	.3513-01	.5057-01	.5885-02	.7150-01	.1081+00	.1361+00	.1751+00	*2733+00	*3570+00	.4513+00	.4165+00	.3295+00	.2852+00	.3790+00	.5628+00	.5895+00	.5436+00	.5105+00	.2319+00	.1063+00	.1929-01	.4121-02	.6993-03	.5635-03
	0.200	.915	.895	.891	.910	,954	.952	106.	.873	*886	.927	.965	866.	266.	.995	966.	.993	.989	776.	.957	846.	806.	.885	.857	.874	806.	*634	.887	.821	.818	.851	t06 ·	996.	.991	866.	1.000	1.000	1.000
	0.500	.827	.795	. 792	.824	. 902	888	.819	.767	.787	.852	,881	8460	646	.987	.987	.983	.973	146.	.907	.892	.823	.709	144.	. 769	.817	.858	.787	.689	.680	.718	.797	.919	.977	966.	1.000	1.000	1.000
	1.000	.729	.689	.688	.731	. 832	.832	.727	.602	.687	.770	.801	706°	.959	,974	.975	996.	.950	106.	*845	.82A	.734	.689	.630	.660	.717	• 766	.683	. 563	. 547	. 584	.672		•			1.000	*
	2.000	.600	.353	. 555	.610	644.	カカト・	.611	.534	.565	999.	.693	*887	.921	646*	.951	.936	.910	. 848	.761	.738	.617	.560	* 486	.520	. 583	.641	.551	.415	.391	.425	.513	.739	.912	.984	866.	1.000	1.000
FRE	2.000	.388	.336	0340	904.	.583	.584	,331	.531	.372	* 489	,511	*886	*827	e879	*887	*863	*824	,734	909*	*56A	417	.347	,269	*302	*367	.431	.341	.200	.183	,211	.289	.531	.805	.959	966.	1.000	1.000
TMOSPHER	10.00	.222	.177	.179	.237	.423	.432	,231	.182	.219	,331	*357	.657	769.	.779	.798	.771	.725	.612	.451	004*	.249	.185	+123	.151	.205	.262	.185	.084	690 .	.088	.149	. 353	.675	.916	.989	1.000	066.
1.00 A	20.00	.092	.064	,064	.100	.254	.268	*06A	*008	* 095	= 174	.197	.369	.523	.624	.660	.638	.586	. 458	.278	.223	.108	* 066	.035	.050	.081	.120	.071	.019	.014	.022	.056	.194	.511	*B44	.970	. 993	866.
DE AT 1	20.00	.012	.008	.006	.013	* 082	.091	.017	.001	+010+	.038	+053	.165	*276	.363	.413	404.	.351	.232	.086	*054	.016	*000	.002	+000*	600*	.019	.008	*000	.000	.001	.007	.056	.280	.686	.924	. 975	.983
DIOXI	100.0	.001	000.	000.	.001	.020	.022	.001	000.	.001	*000	.010	.060	,123	.183	.227	.222	.173	.093	.018	*008	.001	0000	.000	0000.	.000	.002	0000	.000	.000	.000	.001	.013	,136	.516	.852	L 10 .	.963
CARBON	200.0	.000	.000	0000	.000	,002	*005	.000	0000	.000	.000	.001	.012	*035	.041	.087	+010+	+034	.021	.001	.000	* 000	.000	* 000	.000	.000	*000	.000	.000	.000	.000	.000	.001	.048	.332	.730	.886	.017
	500.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	000.	000*	.001	.000	600*	.000	.003	.001	.000	.000	*000	.000	.000	.000	* 000	.000	.000	.000	.000	.000	.000	.000	.005	.129	. 488	.736	.798
	10001	.000	.000	.000	.000	*000	*000	.000	.000	*000	* 000	*000	*000	.000	*000	*000	*000	.000	*000	* 000	.000	*000	.000	* 000	* 000	*000	*000	.000	*000	.000	.000	.000	.000	.000	*036	.274	.541	.637
	2000.	.000	.000	.000	.000	.000	.000	0000	.000	.000.	.000	000.	.000	*000	000.	* 00n	000.	.000	0000	.000	0000	*000	.000	.000	.000	.000	.000	.000	.000	* 000	.000	.000	.000	.000	.003	.101	.296	. 40A
	.0005	*000	.000	.000	0000	.000	0000*	.000	*000	.000	0000	0000	*000	0000	*000	*000	0000.	*000	*000	* 000	0000	* 000	.000	.000	0000	* 000	*000	0000.	*000	0000	.000	*000	.000	.000	* 000	.008	.052	.111
	10000	.000	.000	.000	000	* 000	.000	0000*	*000	0000*	* 000	.000	0000	0000	0000	0000	000.	*000	0000	.000	*000	,000	*000	.000	0000	.000	* 000	.000	.000	.000	.000	*000	.000	* 000	.000	.000	.003	.014
	FRED.	3590.	3595.	35011.	3605.	3610,	3615.	3620.	3625.	3639.	3635	3640.	3645.	3650.	3655.	3669,	3665.	3670.	3675.	3687.	3585.	3691,	3695.	3707.	3705.	3713.	3715.	3727.	3725.	3733.	3735.	3743.	3745.	3750.	3755.	3760.	3765.	3770.



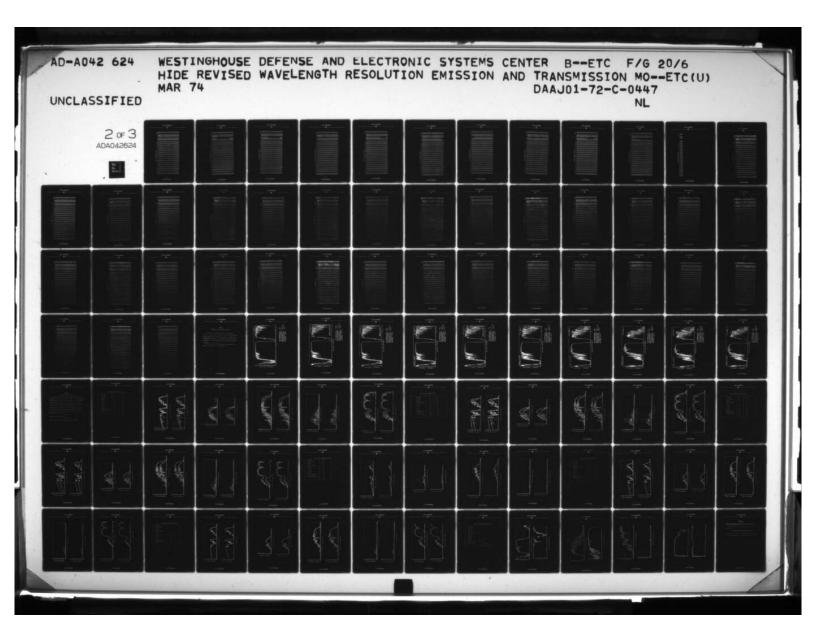
	FRROR	.001	0000	0000	.002	.001	.001	.106	.003	.001	.017	.002	* 000	*005	0000*	.001	0000	000	0000	000*	.000	0000	0000	.000	000.	.000	000.	0000	0000	000.	0000	0000	000.	000.	0000	000.	0000	000
	er.	.9500+00	.9300+00	00+0006.	.8600+00	. B0000+00	.7800+00	.6300+00	.7100+00	.7000+00	.7800+00	.7300+00	.9500+00	.8600400	.9200+00	.2000+01	.1580+01	.1720+01	,1930+01	.2000+01	*2000+01	,2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.2000+01	.1000-01	.1000-01	.100001.	.100001.	.1000-01	100001.	.1000-01	.1000-01	.1000-01	.100001.	.1000-01
	*	.5188-03	.5038-03	.5701-03	.7848-03	.1325-02	.1506-02	.4596-02	.2320-02	*2815-02	.7698-03	.5105-03	*6489-04	.1774-03	*6762-04	.3638-08	.2323-07	.4724-08	.5428-09	.2016-09	.1945-09	01-4446"	.6601-10	.1881-10	.3766-10	.5655-10	.5655-10	*0000	0000*	*0000	.0000	.0000	.0000	.0000	*0000	* 0000	.0000	00000*
	00000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	1,900	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1.000	1,000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1.000	1.000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	666.	6660	1.000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	0		1.000	1.000	**	1.000	1,000	1.000	1.000	1.000	1,000
	2.000	1.000	-	1.000	666.	666	666*	6666	6660	666.	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1,000	1,000	1.000	1.	1.	*	1,000	1 .	1,000	1.000	1.000	1.000	1.000	1.000
True I	5,000	1.000	666	6660	.99₽	. 99A	866°	466°	, 99a	166.	666*	1.000	1,000	1.000	1.000	1.000		-	1.000		**	1.000	1.000	1.000	1.000	1,000			*	1.	1.000	-	1.	1,000	1.000	1.	1.000	1.000
	10.00	666.	666*	866.	4997	966.	.995	966*	166*	766.	166.	1.000	1.000	666.	1.000	1.000	1,000	1,000		1.000	4	1.000	1,000	1.000	1,000	1.000		-1			1.	1,000	1.000	1.000	1.000	1.000	1.000	1.000
00 × 00	20,00	866.	.997	966*	766*	166.	066.	.993	966.	.989		666.	666*	666.	666"	1.000	1.000	1.000	1.000	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
723	20,00	.986	.989	066*	.985	. 979	. 977	.983	.977	. 973	.986	166.	666 *	.99B	866	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000		7.		1.000	1.000	1.000	1,000	1,000	1,000	1,000	1.000	1.000
	100.0	696*	.973	.972	796.	.957	,956	.967	,95A	646	.973	766*	* 998	166.	.997	666.	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	*		1.000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1,000	1.900
	200.0	,933	2460	345	,929	.915	,911	. 935	.915	.907	.956	. 989	.992	960.	* 993	866.	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1,000	1.000	1.000	1,000	-			1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000
	500.0	.837	.851	,856	.878	.818	.818	.85B	.830	.808	.892	.973	.982	.976	. 983	* 997	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000
	1000.	969.	.733	4747	.729	.706	.707	*768	.731	*69₽	.816	146.	.959	.953	1960	.993	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000
	2000.	\$492	* 5533	. 585	.575	.557	.565	.436	.599	.558	.708	.864	.918	906*	.931	. 982	6660	1.000	1,000	1,000	1.0000	1.000	1.000		*			1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000
	5000.	.182	.250	.299	.306	*303	,319	.401	.361	*333	+615	.752	*802	.723	.835	946"	* 982	.988	,992	6995	866"	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000
	10000	.038	.071	.103	.115	.122	.137	.221	.205	+170	.349	+99°	999*	.626	.726	.689	.953	* 965	.972	.980	.980	066.	.993	.998	966.	766.	766	1,000	1.000	1.000	1.000	1.000	1.000	1,000	-	1.000	1.000	1.000
	FRE 3.	3775.	3780.	3785.	3790.	3795.	3800.	381),	3820.	3830.	3840.	3850.	3860,	3870.	3887.	3890.	3900.	3910.	3920.	3930.	3940.	3950.	3960.	3970.	3980.	3990.	40007	4010*	4020.	4030.	4040.	4050*	4000	4070+	4087.	4090	4100.	4110.



	FRROR	.000	0000	.000	.000	0000	.000	.000	.000	.000	.000	* 000	*000	*000	000*	.000	.000	.000	000.	0000	*000	.000	.000	0000	.000	000	.000	000.	.000	0000	.000	0000	000.	0000	000.	0000	.000	0000
	α	.1000-01	.10000-01	.10000-01	.10000-01	.10000-01	.10000-01	.1000-01	.1000-01	.100001.	.100001.	.1000-01	.10000-01	.10000-01	.10000-01	.1000-01	100001.	.10000-01	.10000-01	.10000-01	.10000-01	.10000-01	.10000-01	10000-01	.10000-01	.1000-01	.10000-01	.1000-01	.1000-01	.10000-01	.1000-01	.1000-01	.10000-01	.1000-01	.1000-01	.1000-01	10000-01	10000-01
	4																																					
		.0000	*0000	.0000	00000	00000	00000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	00000	.0000	.0000	*0000	.0000	.0000	.0000	.0000	.0000	00000	.0000	00000	.0000	.0000	00000	*0000	.0000	.0000	00000	.0000	.0000	.0000	.0000	00000
	00000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	÷	1.000	-		1.000	1.000	ä	÷	-	-	-			.;	1.000	1.000	1.000	1.000	÷.	- ·	٠,	1.000
	0.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	٠.	٠,	1.000	1.000
	2.000 1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1.000	-	1.	1.000	1.000	1.000	1,000	i	1.	1,		1.000	-	-1	m	-			н.	٠.	1.000
FRE	5.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	=1		-	-	1.000	•
TMOSPH	10.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	-	-	1.000	1.000
1.00	200.0 100.0 50.00 20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DE AT	50,00	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.	1.000		-	1.000	1,000	1.000	1.000				٠.	1.000
DIOX	100.0	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1.	÷	1.000	1.000	1,000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000
CARBON DIO		1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	.i.	1.000
	500.0	1.000	1.600	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2000. 1000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	and .	*	-	1.000	1.000	1.000	1,000	1.000		1.000	1.000	1.000	1.000	1.000
	5000.	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	10000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.600	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000
	FREG.	4123	4130.	4140.	4150.	4163.	4173.	4181,	4190.	4203*	4210.	4221.	4230.	4240.	4250,	4263.	427).	4280.	4293.	4300.	4310.	4320.	4330,	4340.	4350.	4363.	4373.	4380.	4391.	4400.	4410.	4423.	4430.	*(0555	4450	4460.	4470.	4483.



	FRROR	* 000	0000	0000	* 000	0000	.000	.000	.000	.000	0000*	000.	0000	* 000	.000	.000	.000	.000	0000*	000.	0000	.000	.000	.000	.000	.003	.001	.002	.003	.005	.028	.015	.017	.113	.024	*00*	*038	.015
	Œ	.10000-01	.1000-01	.100001.	.1000-01	.10000-01	.1000-01	.10000-01	.10000-01	.10000-01	.1000-01	.2000+01	.2000+01	,2000+01	.2000401	,2000+01	,2000+01	.8400+00	.2000+01	,1250+01	.1040401.	.9800+00	.9800+00	.8900+00	.9100+00	.7500+00	.7800+00	.7300+00	*9100+00	.1010101.	.4100+00	.7700+00	.7600+00	.5400+00	.6300+00	.6400+00	*6600+00	.6500+00
	∀	.0000	00000	00000	0000*	*0000	00000*	00000	00000	.0000	0000*	,9401-11	.9401-11	.9401-11	.9401-11	.9401-11	.9401-11	*8739+06	.1068-09	,2655~06	.3101-05	*7959=05	.9896-05	.3920-04	.6073-04	.4068-03	.3172-03	.5142-03	.1739-03	.1295~03	.1188-01	1492-02	,1713-02	.1222-01	.9989m02	.1371-01	.1221-01	.1099-01
	006.0	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.500	1,000	1.000	1.000	1.000	666*	666	666.
	0.500	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1.0000	1,000	1.000	666	966"	866	866.
	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.	-	1.000	1,000	1.0000	1,000	1.	1.000	1.000	1.	1,000	1,000	1,000	1,000	-	1.000	1.000	1.000	1,0	7.	1.000		A66.		*	966*
	2.000	*	1.000	ord	1.000	911	100	1.000	1,000	1.000	and.	-		10-1	1.000	1.000	1.000			1.000	1.000	1.000	1,000	1,000	1.000	1.000	1	-	1.000		6660	6660	6660	6998	966.	, 992	066.	266.
1	2.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	6660	666	6660	866°	866°	. 996	166*	.981	.976	.986
	10.00	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1,000	1,000	1,000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	666 *	666.	666.	6666	866 *	1660	966.	. 995	1992	.987	1961	.953	.961
N C	20.00	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	666.	0660	666 *	. 990	866	966 *	466	.991	. 981	: 985	.985	. 936	.918	.936
T=30	50.00 20.00	1.000	1.000	1.000	*		*	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	6660	866.	166.	166.	966*	966 "	. 991	. 985	.978	. 977	1961	.921	* A 5.5	*839	.861
	100.0	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	666	666.	866.	966	166.	. 993	.993	* 989	. 982	.971	* 957	,956	. 931	*863	.784	. 755	,766
	200.0	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	1,000	1,000	1,000	1,000	1.000	1.000	1,000	1.000	1,000	666*	666	866.	1660	2660	.987	. 987	.986	.978	966	2460	.91B	916.	* A75	.775	*674	.642	*688
	200.0	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1,000	1,000	1,000	666.	* 998	2660	966*	* 992	.987	696 .	196°	1960	946	.917	.873	.822	. 81	,751	* 666	* 485	,461	.520
	1000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	6660	8660	966*	* 663	* 992	* 984	* 985	* 942	.941	.931	.899	* A47	,776	.706	969.	+614	8448	.319	*366	+368
	2000.	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	6666 *	666.	. 998	* 991	* 986	.983	. 969	* 934	*895	. 893	* 878	.875	. 734	. 685	.654	+539	699.	*286	*166	.151	.218
	2000.	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	6666	6660	. 988	646	1961	636	.921	*861	* 752	* 765	.748	.648	. 520	+994	* 329	* 364	-232	+112	040 *	.032	.067
	100001	1,000	1,000	1.000	1,000	1.000	1,000	1,000	1,000	1.000	1,000	666	666	6660	666	666	666	866	. 989	,974	* 956	,936	. 921	.869	*770	.678	1,665	. 662	.472	.238	.632	691.	077.	.199	.038	.007	.005	.012
	FREG.	*0644	4503+	4510.	4520.	4530.	4540.	4550.	456).	4570.	4580.	4590.	4600,	4610.	462),	4630.	4640.	4650.	4660.	4670.	4680.	*669#	4703.	4710.	4720.	4730.	4740.	4750.	4760.	4770.	4780.	4790.	46004	4810.	4820.	4833.	4840.	4850+





	FRROR	.368	.010	.063	.026	.015	1000	.002	.101	.015	.071	+00·	.229	.016	.215	.257	.013	000.	000.	000.	.005	000.	.001	.019	.153	+00.	.083	.028	.011	.017	+00.	000.	000.	000.	000.	000.	000.	000.
	α	.4400+00	.6600+00	.6300+00	.6800+00	.8000+00	.7700+00	.7900+00	.6000+00	.6100+00	.5700+00	.6800+00	.6700+00	.6200+00	.5500+00	00+00/4.	00+0065.	.6800+00	.9300+00	.8800+00	.6600+00	.7000+00	.6400+00	.7000+00	.6700+00	.6200+00	.5400+00	.5800+00	.6200+00	.6600+00	.7200+00	.8800+00	.10000+01	.6500+00	.1250+01	.1160+01	.2000+01	.1040401.
	•	.5043-01	.1418-01	.1098-01	.4508-02	.1055-02	.1332-02	.1455-02	.1015-01	.1477-01	.3316-01	.2102-01	.2022-01	.3186-01	.5542-01	.6741-01	.2147-01	.1641-02	.9260-04	.1679-03	.1804-02	.2326-02	.6031-02	.5895-02	.7169-02	1203-01	.2705-01	.1881-01	.7857-02	.3357-02	.7275-03	+0-0109.	.3659-05	1069-04	1802-06	.5784-06	.1216-08	.1625-05
	0000	666.	666.	666.	1.000	1.000	1.000	1.000	1.000	666.	866.	866.	866.	866.	166.	966.	666.	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	066.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	166.	166.	966.	1.000	1.000	1.000	1.000	1.000	866.	966.	<b>#66</b> .	866.	<b>#66</b>	. 993	.995	866.	1.000	1.000	1.000	1.000	1.000	666.	866.	866.	866.	866.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1.000	366.	166.	466.	666.	1.000	1.000	1.000	666.	166.	:66.	686.	966.	686.	986	066.	.997	1.000	1.000	1.000	1.000	666.	866.	166.	166.	166.	966.	966.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2.000	066.	686.	.993	866.	666.	666.	666.	866.	166.	986.	.978	.980	.978	.973	.986	766°	666.	1.000	1.000	1.000	666.	166.	166.	766.	166.	.992	. 993	166.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
RE	2.000	.977	.973	186.	n66.	866·	666.	866.	966.	.985	996.	846.	.952	646.	.937	.953	.985	866.	1.000	1.000	666.	166.	666.	.986	.987	.986	.981	,984	ħ66.	666€	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000
TMOSPH	10.00	.957	646.	696.	686.	966.	166.	966.	066.	.970	.936	106.	.914	806.	.888	.916	.971	166.	1.000	666.	866.	166.	.985	,974	.974	.973	.963	.962	.988	966.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000
. X		.922	106.	.943	.975	:663	166.	.992	.981	.945	.889	.845	.855	118.	.816	.826	846.	.993	666.	866.	866.	.988	.971	.951	.951	646.	.921	546.	916.	. 663	166.	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DE AT 1.	50.00 20.00	.847	.819	.882	.952	.982	986.	186.	196.	.885	.791	.727	*735	.720	.683	.752	.897	+86°	166.	966.	.988	.972	.936	.896	168.	.891	.857	.874	546.	.982	.992	666.	1.000	1.000	1.000	1.000	1.000	1.000
DIOXIDE		.767	.726	. A12	.915	.965	.973	.963	.916	.816	.683	909*	.617	.591	,551	.643	848	.971	\$66.	.992	826.	646.	.893	.833	.833	.852	.772	164.	.903	.968	.985	166.	1.000	1.000	1.000	1.000	1.000	1.000
CARBON	200.0 100.0	199.	699.	.716	.856	.952	140.	.927	.854	.706	+ 544	454	194.	.434	.397	.516	· 764	646.	066.	.984	.958	.911	.832	.751	.748	.730	.661	.691	.836	.932	.972	\$66.	666.	1.000	1.000	1.000	1.000	1.000
	200.0	.491	.418	149.	.730	.848	.877	.836	.719	.521	.331	.236	.244	.220	.191	.216	.632	.898	.975	.962	.910	.832	.719	t09.	. 595	.565	.477	.513	.706	.820	.963	.987	866.	1.000	666.	666.	666.	666.
	10001	.346	.257	.492	.692	.739	.780	.716	.573	.362	.183	.101	.108	960.	.076	.184	.514	.830	646.	.929	. A49	.742	.603	.480	0111.	.412	.320	.355	.558	.748	.883	.975	966.	666.	666.	866.	866.	866.
	2000.	.190	.115	.238	.423	.689	.634	.548	.298	.212	.076	.026	.056	.027	.019	060.	.392	.747	.895	.876	.757	619	.455	.299	.283	.258	.176	.206	.398	.608	.865	.952	.993	866.	166.	966.	966.	966.
	2000	.081	.021	.086	.215	.357	.367	.292	.176	*065	.012	.001	.002	.002	.003	.020	.245	.582	.772	.737	.577	.405	.250	.112	.161	.092	.057	.065	.204	.358	.685	168.	.982	166.	. 993	686.	066.	.988
	100001	.075	.002	.028	160.	.192	.207	,123	.084	.018	* 005	* 000	0000	0000	0000	.007	.145	.424	,616	,574	.468	.231	.111	.023	.028	.027	.023	.021	160.	.242	.586	.819	196.	966.	.982	516.	.881	116.
	FRE 3.	4860.	4873.	4880.	4893.	4900.	4910.	4921.	4933.	*0464	4950.	*6964	4973.	4983.	*6664	5000.	5010.	5021.	5030.	5040.	5050.	5063.	5070.	5080.	2090.	5103.	5110.	5120.	5133.	5140.	5150.	5160.	5170.	5187.	5190.	5200.	5210.	5223.



	acada	200	000	0000	0000	000		000.	000.	0000	000.	0000	000.	000.	000	.000	000	000	000				000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	0000	000.	000.	000.	000.	000.	000.	000.	0000	
	0		.7600+00	00+0066.	1260+01	300000		1020401	.1170+01	. 8400+00	.2000+01	10000-01	1000-01	1000-01	100001	10000-01	1000-01	10-0001	10001		10-0001		10-0001.		10-0001.	10000-01	.10000-01	.1000-01	10000-01	100001.	10000-01	100001.	.100001.	10000-01	.20000+01	.9300+00	.1350+0:	.1170+01	.1060+01	1060+01	.1020+01	
	•	•	.2278-04	2849-05	4563-07	0000	04-06-0	.8155-08	.6136-07	.8739-06	.4710-10	0000	0000	0000	0000	0000	0000	0000	0000	0000.	0000	0000	0000.	0000	0000.	00000	0000.	0000.	0000.	00000	00000	0000.	0000.	0000	.9401-11	.2163-06	.8153-08	.6136-07	.2329-06	.2329-06	.5013-06	
		006.0	1.000	1.000	000	0000	1.000	1.000	1.000	1.000	-								٠,	٠,	~ .		~	-	-		1.000	1.000	1.000	1.000	1.000	***	1.000	1.000	1.000	1.000	-			-	-	4
		0.500	1,000	1,000	000	0000	1.000	1.000	1,000	1.000	1.000	000	1000	1.000		4	000			٠.	٠.	- 1	-	-	-	-	1,000	-	ä	1,000	1.000		1.000	1.000	1,000	1.000	1.000	-	-	1.000	1.000	****
		1.000	1.000	000		10001	1.000	1.000	1.000	1.000	1.000	000	0000		٠.	000			٠,	1.000	-	-	•	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-		4	-	4 -	1220
		2.000	1.000	000	0000	1.000	1.000	1.000	1.000	1.000	1.000	000	7.000	0000	4.000	7.000	0000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	-	-	-		٠,		-	4
ERE		2.000	000	000	0001	1,000	1,000	1.000	1.000	000		0000	600.7	00001	7.000	1.000	0000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	~	1.000	-	1.000		4 -	٠.		٠.	-	11111111
ATMOSPHERE		10.00	000	0000	0000	1.000	1.000	1.000	1.000	000	000	0000	00001	1.000	0000	00001	0000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	**		-	1000		:-	1.000		A. CHILL
A 00.1	×	00.00	000	0000	1.000	1.000	1.000	1.000	000	000	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000		000	1.000	000	000.	1111111
DE AT	T=300	50.00 20.00	000	000.	00001	1.000	1.000	1.000	000	0000	0000	1.000	1.000	1.000	0000 .	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-		000	0000	1.000	1.000	0000	1 . 110111
ARBON DIOXIDE AT		10000	000	0000	000.1	00001	00001	1.000	000	000	00001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			-	•		4 -	4 *	• •	4 *	٠,	٠.	1.000	1.000	1 . 111111
APBON		200.00		566	00001	00001	1.000	000	000	000.	000.1	00001	1.000	00001	00001	1.000	0	0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000	000	1.000			000	000	0000	0000	0000	-	٠.	1.000	000
		500.003	0	266.	666.	000	000	000	000	000.1	000*1	000.1	000.1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1000	000	000	000	1 000	000	000	000	000	000.1	000.1	1.000	1.000	1.000	1.000	11001
		1000.		166.	. 99B	000.	.000	000	000	000.	000.1	000-1	000.1	000.1	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000	000	000	000	000	000	000.	100.	000.	000.	00001	1.000	1.000	1.000	1.000	000
		2000. 1		* 992	966*	666	ייייי		000.1	666.	666.	00001	00001	000.1	1.000	00001	1.000	1.000	1.000	1.000	1.000	1.000	000	1.000	0000	000	000	000	0000	0000	000	000	000	000	0000	1.000	1.000	1.000	666.	666.	666.	000
		50000.		186.	.985	998	000			6666	666.	00001	1.000	1.000	1,000	00001	00001	00001	00001	000	1.000	1.000	000	000	000	0000	0000	1.000	0000	1.000	0000	0000	0000	0000	0000	1.000	666.	666.	666.	866.	866.	100
		10000 5		916.	.975	900	100			166.	m	. 995	1.0001							1.000			000		000	0000	0000	0000	1.000	1.000	0000	1.000	1.000	1.000	1.000	666.	666.	866.	166.	966.	966.	300
		FREG. 1		5230.	5240.	5250	5360		5277	5280.	5291.	530 1.	5310. 1	-	-	5340. 1				5380.	5390	2401		200				.0040		24.	.000	0640	.0000	5510.	5550	5537	2240.	5550.	5560.	5570.	5580.	



						CARBON	NOIG N	CARBON DIOXIDE AT 1.00 ATMOSPHERE	1.00	TMOSPH	ERE							
FREQ.	FRE9. 10000	5000		2000. 1000.	500.0		200.0 100.0		50.00 20.00 10.00		5.000 2.000 1.000 0.500 0.200	2.000	1.000	0.500	00000	•	α	R FRROR
5600.	766.	166.	866.	666.	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	A0-7315.	00000	
5620	855.	*		1.000	٠,	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	A153-08	145040	
5640	0000	1.000		1.000	٠.	٠.	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	1000-01	
5000	900	4	0000	1.000	٠.	٠.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.9401-11	.2000+01	000
	0000	666.	1.000	٠,	٠,	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.4001-10	2000401	
5660	166.	866.	566.	٠.		-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1039-05	8700+00	000
5670	200	166.	555	-	٠.	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	4304-06	1020401	
5680	900	166	666.	666.	٠.		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.1600-06	1160+01	000
5690	966	900	000	666	1.000	٠,	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.5013-06	.1020+01	000
5700.	989	. 995	900	000	٠,	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.6244-05	. 7000+00	.000
5710.	966.	866.	000	1.000	4 -	+	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1307-07	.1540+01	000
572(1.	1.000	1.000	1.000	1.000	* *	4 +-	1.000	1.000	0000.	1.000	1.000	1.000	1.000	1.000	1.000	.2329-06	.1060+01	.000
5730.	1.000	1.000	1.000	1.000	-	-	000.	000	000.	0000.	1.000	1.000	1.000	1.000	1.000	0000.	.1000-01	.000
5740.	1.000	1.000	1.000	1.000	4		1.000	000	000.	0000	1.000	1.000	1.000	1.000	1.000	0000.	.10000-01	.000
5750.	1.000	1.000	-	1.000	-		000	000	0000	0000	1.000	1.000	1.000	1.000	1.000	.0000	.10000-01	.000
5760.	1.000	1.000	•	1.000	1.000		000	000	0000	0000	1.000	1.000	1.000	1.000	1.000	00000	.100001.	.000
5770.	1.000	-		1.000	-		000	000	0000	0000	1.000	1.000	1.000	1.000	1.000	0000.	100001.	000.
5780.	1.000	-	-	1.000	-	-	1.000	000	000	0000	00001	00001	1.000	1.000	1.000	0000.	100001.	.000
5790.	1,000	1.000	1.000	1.000	1.000	~	1.000	1.000	1.000	1.000	00001	00001	1.000	1.000	1.000	0000.	100001.	.000
5800.	1.000	1.000	1.000	1.000	1.000	**	1.000	1.000	1.000	000	0000	000.	000.1	000.	1.000	0000.	.1000-01	.000
5810.	1,000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	000	000	0000	0000.	000.	1.000	0000.	100001.	.000
5820.	1.000	1.000	1.000	1.000	-	-	1.000	1.000	000	1.000	0000	0000	00001	0000.	1.000	0000	.1000-01	.000
5830.	1.000	1.000	1.000	1.000	-	-	1.000	1.000	000	000	0000	0000	00001	0000.	1.000	00000	10000-01	000.
5840.	1.000	1.000	1.000	3.000	1.000	-	1.000	1.000	1000	000	000	0000	0000	0000	1.000	0000.	10000-01	.000
5850.	1.000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1000	1.000	0000	0000	10000-01	000.
5870	1.000	1.000	1.000	1.000	٦.	٠.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	10-0001	000.
5881.	1000		0000	0000.	٠.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.0000	1000-01	
5890.	1.000	1.000	1.000	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00001	1.000	1.000	1.000	00000	10000-01	
590n.	1.000	1.000	1.000	000		٠.	000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.0000	.1000-01	.000
5910.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00001	1.000	1.000	1.000	00000	.1000-01	.000
5920.	666.	1.000	1.000	1.000	1.000	-	1.000	000	000.	0000	00001	0000	1.000	1.000	1.000	0000.	.1000-01	000.
5930.	866.	666.	1.000	1.000	1.000	-	1.000	1.000	000	0000	00001	000.	1.000	1.000	1.000	.9401-11	.2000+01	.000
5940.	866.	666.	1.000	1.000	1,000	-	1.000	1.000	000	1.000	0000	0000	00001	00001	1.000	.8153-08	1350+01	.000
5950.	866.	666.	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	000	0000	0000	0000	1.000	.8153-08	1350+01	.000
2960.	.998	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000	0000	1.000	1.000	.8739-06	1350+01	000.



	FRROR	000	000	000	000	000	000	000	000	000	000	000.	000	000	000	000	000	000	000	000	000	000	000.	000	000	100	000	000	100	100	000	000	000	000	000	000	000	100
	A FR	8700+00	1060+01	1150+01	1260+01	9300+00	A700+00	1000+01	1170+01	7300+00	8400+00	8800+00	9300+00	9200+00	9100+00	7300+00	9800+00	00+0066	9200+00	8500+00					7300+00	5800+00	7200+00	7300+00	6700+00	Ī	7600+00		8700+00	00+0066	8700+00	7600+00	7000+00	6800+00
	•	. 10.49-05	. 2329-06					.1611-05	•	•	•	•		. 2728-04 .	. 2596-04	•		•	.7234-05	. 9877-05	•	•	•	•	•	.2350-02	. 7384-03 .	•	.1271-02 .	•	. 2395-03	•	.7671-05	•	•	•	.6169-03	•
	00000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.500	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2.000 1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ERE	5.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	666.	666.	1.000	1.000	1,000	1.000	1.000	1.000	1.000	666.
ATMOSPHERE	10.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	666.	866.	866.	666.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.
00 ×	50.00 20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	866.	166.	166.	166.	166.	166.	666.	1.000	1.000	1.000	1.000	666.	866.	2660
DE AT 1	20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	866.	. 995	.992	. 993	. 993	.992	. 993	166.	1.000	1.000	1.000	1.000	866.	.995	.992
CARBON DIOXIDE AT	100.0	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	666.	666.	666.	666.	866.	666.	666.	1,000	1.000	1.000	1.000	1.000	660.	866.	966.	. 991	.985	.987	.987	196.	.987	\$66.	666.	1.000	1.000	666.	966	.991	.984
CARBON	200.0	1.000	1.000	1.000	1.000	1.000	1,000	1.000	666.	866.	166.	866.	166.	166.	166.	866.	666.	666.	666.	666.	666.	666.	966.	166.	:963	.972	.974	170.	.965	.975	066.	866.	1.000	1.000	866.	. 993	.982	026.
	500.0	1.000	1,000	1.000	666.	666.	666.	666.	B66.	966.	166.	766.	766.	266.	.993	166.	866.	866·	866.	666.	866.	866.	166.	.982	.959	.935	1 76.	16.	. 43	246.	16.	.995	666	666.	. 995	.983	.958	.932
	1000.	1.000	1.000	1.000	066	666.	666.	866.	966.	. 991	.986	.988	.988	186.	.987	. 993	166.	166.	166.	166.	966.	166.	.982	996.	.926	.886	.897	.896	618.	688.	.957	166.	866.	166.	066.	1961	.926	.882
	2000.	666.	666.	666.	866.	966.	966.	166.	266.	.962	.973	.977	916.	.965	· 974	196.	166.	166.	166.	₩66.	.992	.982	962	.936	.874	.812	.836	.830	£09.	.834	,924	.982	666.	. 995	.980	246.	.876	,811
	5000.	866.	866.	166.	<b>\$66.</b>	166.	\$66.	266.	986.	626.	.929	946.	846.	626	.941	196.	.983	.984	.982	.985	.986	.937	.918	.865	.767	119.	. 704	.708	0.0	. 714	.852	.958	. 985	.987	.956	.886	. 781	.682
	10000	166.	966.	166.	.985	.987	686	186.	.962	.924	.893	906.	.902	.876	.893	.935	196.	696.	996.	916.	.961	.915	.852	.777	.652	.635	572	. 565	2000	160.	111.	426.	976	516.	,924	279.	.681	255.
	FREC.	5970.	5980.	. 1665	.0009	6010.	602r.	6036.	* 3409	6050	. 1909	.0109	6080	* 3609	6100.	6110.	6120.	6130.	6140.	6150.	6160.	617(.	6180.	6190.	6200.	6210,	. 1229	6230.			.0000		. 1829	6291.	6301	6310.	6321	6330



	FRROR	.002	000.	.001	.003	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	-005	.016	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.
	α	00+0069.	.7000+00	00+0069.	00+0006.	.7600+00	.9200+00	.2000+01	1350+01	1320+01	.8700+00	.1020+01	1040401.	00+00+6.	.9200+00	.8600+00	.8700+00	.8400+00	.7300+00	.9300+00	00+0006.	00+0016	1010+01	.1120+01	.1140+01	.2000+01	1000010	10-0001	10000-01	10000-01	10000-01	10000-01	.1000-01	.1000-01	10000-01	.2000+01	1350+01	.8700+00
	•	.1056-02	.9679-03	.1355-02	.2255-03	.2697-03	.1055-04	.1277-09	.8153-08	.8153-08	.1039-05	.5013-06	.5314-06	.4746-05	.1394-04	.4225-04	10-0111.	.5716-04	.2191-03	.9535-04	.2268-04	3341-05	.1950-05	.4330-06	.8706-07	.9401-11	0000.	0000	0000	0000.	0000.	0000.	0000.	0000.	0000.	.9401-11	.8153-08	.1039-05
	00000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000		٠,	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000
	0.500	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000	1.000	-	.i.	1.000	1.000	-	-	-	-	-	-	-	-:	-	٠.		٠.	-	<u>.</u>	-	-	-	-	1.000	1.000	1.000	1.000
	2.000 1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	_	-	-	•	-	-	-	-	-	-	-	1.000	-	-	-	-	-	-	-	-	-	1.000	1.000	1.000	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000	1.000	-	-	1.000	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ERE	5.000	666.	666.	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000	1.000	-	-	-	-	-	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000
ATMOSPHERE	10.00	866.	866.	866.	866.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	20.00	766.	166.	866.	966.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DIOXIDE AT 1.00	50.00 20.00	.993	.992	986.	.992	160.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	666.	666.	666.	1.000	-	1.000	1.000	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1010	100.0	.985	.985	.980	196.	166.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	866.	866.	866.	166.	166.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		1.000	1.000	200	1.000	1.000
CAPBON	200.0	.972	.971	.961	.968	686.	666.	1.000	1.000	1.000	1.000	1.000	1.000	666.	866.	166.	866.	166.	966.	.995	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	500.0	.936	.934	.913	.928	476.	166.	1.000	1.000	1.000	1.000	1.000	1.000	860.	866.	266.	166.	166.	986.	.987	166.	666.	060.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1000.	a.	. 885	. 851	.874	.952	766.	1.000	1.000	1.000	1.000	666.	666.	166.	266.	.985	.982	.983	.977	.975	.989	166.	866.	066.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	2000.	.819	914	.764	. 795	.915	.989	1.000	1.000	1.000	666.	666.	.998	166.	.985	.971	996.	.965	.956	.953	616.	566.	966.	866.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.
	5000.	199.	.681	609	.647	.835	.973	866.	666.	666.	966.	166.	166.	.986	196.	.936	.926	.928	.864	169.	.952	.987	686.	166.	866.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	866.
	10000	. 552	546	463	401	.746	.951	.987	866.	866.	166.	766.	.988	.973	.936	.891	.876	.878	.846	.626	16.	.975	616.	.987	166.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	666.	866.	166.
	FREG.	6341.	6350	6361.	6370.	6380.	6390.	6400.	6410.	6420.	6430.	94411	6450.	6460.	64711.	64811.	.0649	6500.	6510.	6520.	6530.	6540.	6550.	6560.	6570.	6587.	.0659	.1099	661).	6623.	663).	664).	665).	6663.	6673.	6683.	6693.	6701.



CARBON 1000 5000. 2000. 1000. 500.0 200.0 1994 994 994 994 994 999 999 1.000 1.000 1.962 994 995 995 995 995 995 995 995 995 995
2000. 2000. 1000. 500.0 2 997 994 998 999 1.000 1 999 999 999 999 999 999 999 999 99
997 999 999 999 999 999 999 999 999 999



	FPROR	.000	0000	000.	000.	000	000.	000.	.000	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	000.	.000	000.	000.	000.	000.	000.	000.	.015	000.	000.	000.	000.	.001	000.	000.	.000	000.	+00.
	α	.10000-01	.1000-01	.10000-01	.1000-01	.2000+01	.9300+00	.9300+00	.9300+00	.9300+00	.9300+00	.9300+00	.8700+00	.6500+00	00+0096*	.1160+01	.8700+00	.1510+01	00+0066.	00+0096.	.9100+00	.8800+00	.7000+00	.100001.	.9500+00	.9700+00	00+0016.	.2000+01	.8200+00	.5500+00	.1130+01	00+0066.	.8500+00	.9800+00	00+0046.	.1030+01	.8100+00	3900+00
	•	.0000	0000.	0000	0000.	.9401-11	.2163-06	.2163-06	.2163-06	.2163-06	.2163-06	.2163-06	.1039-05	.8571-05	.1159-05	1600-06	.2353-05	.1459-07	.2566-05	.8192-05	.1816-04	1996-04	.1110-03	.9190-05	.1271-04	.7045-05	.7506-05	.5375-08	.1911-04	.8472-04	.7123-06	.4498-05	.3967-04	.1624-04	.2487-04	.2093-04	.2523-03	. 787-02
	000.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-	-	1.000	-	-	-	-	-	-	-	1.000	-	-	-	1.000	-	-	-	-	1.000	-	1.000	1.000	1.000	1.000	1.000
	0.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-	-	1.000	1.000	1.000	1.000	1.000	-	-	1.000	-	1.000	-	1.000	-	1.000	1.000	1.000	1.000	1.000
	2.000 1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-	-	•	-	1.000	-	-	-	-	1.000	-	-	-	-	-	-	1.000	1.000	1.000	1.000
	2.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-	-	-	-	-	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ERE	5.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000	•	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.
ATMOSPHERE	10.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000	-	-	-	-	-	-	-	-	-	1.000	•	-	1.000	1.000	1.000	1.000	1.000	1.000	666.	866.
	20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-	-	-	1.000	-	-	-	_	•	1.000	•	-	-	-	1.000	-	-	-	-	-	1.000	1.000	1.000	.998	.997
CARBON DIOXIDE AT 1.00	50.00 20.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-	-	-	1.000	-	-	•	•	•	•		1.000	-	-	_	-	_	_	1.000	1.000	666.	666.	866.	966.	.992
DIOXI	100.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	666.	666.	666.	666.	1.000	1.000	-	-	1.000	1.000	666.	866.	866.	166.	.992	.984
CARBON	200.0 100.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	.998	860.	866.	866.	. 998	666.	666.	666.	666.	066.	1.000	666.	866.	166.	160.	166.	.989	696.
	500.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	166.	566.	966.	966.	\$66.	966.	166.	866.	866.	666.	866.	666.	866.	\$66.	.992	266.	.985	.963	.930
	1000.	1.000	-	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	666.	666.	866.	766.	160.	266.	. 992	066.	166.	766.	966.	166.	966.	166.	.998	966.	066.	.985	.984	.972	.931	. A79
	2000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	866.	666.	866.	866.	566.	.988	.982	.983	.965	986.	.983	686.	.993	. 663	.992	.993	866.	.992	.986	.971	696.	.945	.879	.873
	.0009	1.000	1.000	1.000	1,000	1.000	666.	666.	666.	666.	666.	666.	866.	166.	966.	166.	966.	666.	.988	.971	.958	.965	096.	.952	.959	.973	.982	.983	.975	686.	.988	646.	.929	.936	.928	.880	.787	.862
	10000	1.000	-		1.000	666.	666.	666.	666.	666.	666.	666.	166.	166.	.992	. 993	.993	186.	. 977	546.	.924	.936	.933	.913	.923	846.	.968	.567	996.	.988	.977	.960	.911	.873	.868	.757	.643	.820
	FREO.	70801.	70901	7100.	7110.	7120.	7130.	7140.	7150.	71611.	7170.	7180.	7190.	72011.	7210.	7220.	7230.	7240.	7250.	7260.	7270.	7280.	7290.	7300.	7310.	7321 .	7330.	7340.	7350.	7360.	7370.	7380.	7390.	1400.	7410.	7421 .	7430.	144(



			FRROR		.003	.000	100.	000	000		000.	000.	0000	000.	000.	000.	.000	.001	.002	.001	.016	.016	.002	.000	000.	000.	000.	000.	000.	000.	000.	.000	.001	.011	.001	.001	.002	.000	000.	000.	000.	000
			Œ		• 6200+00	•	•	.5600+00		A400+00	. 0200		000000	00+0016		710000	00000	00+00000	00+0000	00+0089.	. 7100+00	·6800+00	.6300+00	00+0069.	.9300+00	00+0066.	.9500+00	.1810+01	1160+01	.8500+00	00+0067	00+00/9.	00+00/00	1800+00	.7000+00	.7000+00	6100+00	00+0046	9300+00	1130+01	1150+01	9300+00
			•	1025-02	20-034	50-75-03	-5119-05	.3208-02	.3478-02	.8487-04	.1155-04	.1146-0A	.5016-05	.2596-04	.1234-03	.9687-03	.2002-02	3041-02	20000	20000	2016-02	20-0163	20-1902	60-0000	1331-04	50-1691-	50-88-02	60-00/6	50-7-01	10-86/4	20000	110000	1040	2020	20-011.	1307-02	1416-02	. 202/-04	2334-04	1114-05	1533-06	90-691
		0.200		1.000	1.000	1	000.	0000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000		000		000	000	000	000	000	000	000	000.	000	0000		000	000.	000	000	200
		0.500		1.000	1.000	1.000	1		0000.	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00001	00001	0000.	. 000	000	. 000	. 000	. 000	.000	.000	.000.	-	**	•	-		4 -	٠-		000	000	000	
		1.000		1.000	1.000	1.000	1.000	1000	0000	0000	1.000	1.000				1.000					-	-	-	-	1.0001	-	•	-	.000.	.000 1	.000 1	.000 1	000 1	000 1	000 1	_	.000 1.	1 000	000 1.	000 1.	000 1.	
		2.000		1.000	1.000	1.000	1.000	1.000	000	000	0000.	0000	0000	000.	0000	0000	566.	666.	666.	666.					1.000.1														-	-	000 1.	
103	E NE	2.000		666.	666.	666	666.	1.000	1.000	1.000	000			000	000	566	266.	166.	466	166.			.000 1						-	1.000 1	_	-	-	_	-	-	-		.000 1.	000 1.	000 1.	
TWOSPHEDE		10.00		866.	966.	866.	866.	666.	1.000	1.000	000	000	000	. 000	000	966	000	066	066				•	••	.000	~	-			.000		966	•					.000.	-	000 1.	000 1.	
1.00	×	20.00	000	000		666.	966.	866.	666.	1.000	00001	0000	.000	666.	966.	266.	100	2 8 8 9	000	080	200	066			. 000		٠.	7 000	٠.	-					•		٠.	٠.	٠.	.000	1 100	٠
DE AT	T=300			. 992				0	-			.000													1.000	٠.	٠.	٠.	4									٠.	. 000		1000	
DIOXI	0.00		.983	.985	186	080	000	000	166.	666.	.000	.000.	666.			996.									000												060	٠.	-	1.000		
CAMBON	200.0		196.	.972	996.	196.	.080	100	1000	666.	.000	. 999 1	166.		896.										.000	-				.0	6	. 673 .						-		100 1.6		
	500.0		.956	.936	.924	126.	986.	986.	.007	. 000	1 666.			000	. 76.	10.								•	-	-	~			•		. 938					-	. 996.	-	00 1.6		
	1000.			.888	_	.864						000											. 266.	•	•	•	•	Ī	•	913							686	5. 96	0 1	0		
	2000. 1		61.	.818	151.	. 784	.867	.951	.986	966	100	974	936		646										. 166	•	•	•	•	. 628	•	•	•	•	•	•	•	6. 266	999 1.0	00 1.00		
	5000. 2	033	000	000	2000	.000	1991	.893	.972	966.	982	176	833	657	667	431	4441			•	•	-	•	•	. 666	•	•							786		6. 400	•	5.	6. 166	0 1 66		
	10000	573	25.	576	104	22.0	000	679	946.	086	996	893	736		•	. 265	273		225			•	-	•		•	•	•	•			503			•	•	•	•	6. 000	•		
	FREC. 1	456.	. 191	471.	. 81						3.	) + 0		19	Ī	•			•						•		•	•		• •		•				•	•	•	7816.	•		
	L	7	7	-	7,	7	1	1	-	1	7.	75	75	75	75	75	75	76	16	16	76	76	15	750	16	76	769	770	771	772	773	774	775	776	777	778	779	780	781			

B-29



						CARBON	CARBON DIOXIDE AT 1.00	DE AT	1.00	ATMOSPHERE	ERE							
200								T=300	× 00									
	10000	.0000		2000. 1000.	2000		200.0 100.0 50.00 20.00	20.00	20.00	10.00	2.000	2.000 1.000	1.000	0.500	00000	4	α	ERROR
7820.	666.	666.	1.000		1.000	1.000	1.000	1.000										
7836.	666.	666.	1.000		-	-	1.000	000	000		1.000	0000.	1.000	0000	1.000	.2163-06	•	0000
7846.	666.	666.	1.000		1.000	-			0000	0000.	1.000	000.	1.000	1.000	1.000	.2163-06	•	.000
7850.	666.	666.	1.000	1.000				000	0000	0000	1.000	1.000	1.000	1.000	1.000	.2163-06	•	.000
7860.	166.	866.	1.000	1.000	-	-	000		0000	0000	1.000	1.000	1.000	1.000	1.000	.2163-06	•	.000
7870.	766.	166.	666	000	1.000			000	0000	0000	1.000	1.000	1.000	1.000	1.000	.8706-07	.1140+01	.000
7886.	766.	966.	100	000	000	000	000	000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.5013-06	.1020+01	.000
7891.	.965	.981	666	760	000	000	0000	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.2943-04	.5800+00	.000
7900	046.	.987	988	100	700	000	000	000.	00001	0000	1.000	000.1	000.1	1.000	1.000	.6821-05	.9300+00	.000
7910.	.825	.867	.988	160.	766	000	666	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.1157-07	.1680+01	.000
7920 .	.535	.564	.925	.992	100	000	000	0000	1.000	0000	1.000	0000	00001	1.000	1.000	.2244-04	00+0066.	.003
7936.	.812	.951	975	966	000	000	000	000	1.000	1.000	1.000	0000	000.	1.000	1.000	.2098-03	.8800+00	.061
7946.	.929	.967	.982	166	366	200	000	000	1.000	1.000	1.000	000	000.1	1.000	1.000	.6863-08	.1870+01	000.
7956.	.871	.984	766.	. 997	060	000	000		00001	0000	1.000	0000	000.	00001	1.000	.1147-04	.9500+00	.000
7961.	.993	166.	966.	060	1.000	1.000		000	0000	0000	1.000	0000	.000	000.1	1.000	.1338-08	.2000+01	.000
7970.	166.	866.	666.	060	1.000	1000	000		0000.	0000.	1.000	0000	0000	000.1	1.000	.1949-04	.6500+00	000.
7980.	.992	166.	966	000	1.000	000	000	0000.	1.000	1.000	1.000	0000	0000	000.1	1.000	.4882-05	.7000+00	.000
7996.	866.	666.	1.000	1.000	1.000	• -	000	0000	1.000	0000.	1.000	000.	0000	0000	1.000	.4467-05	.8200+00	.000
8000	1.000	1.000	1.000	1.000	1.000	• -		0000	1.000	1.000	1.000	0000	0000	000.1	1.000	.8153-08	.1350+01	.000
8016.	-	1.000	1.000	1.000	1.000		0000	1.000	1.000	1.000	1.000	000.	0000	00001	1.000	00000	.1000-01	000.
8026.	-	1.000	1.000	1.000	1.000		000	0000	1.000	00001	0000	0000	0000	0000	1.000	00000	.1000-01	000.
8036.	1.000	1.000	1.000	1.000	1.000	-		000	0000	0000	0000	. 000	0000	0000	000-1	0000.	.1000-01	0000
8046.	1.000	1.000	1.000	1.000	1.000	-			0000	0000	0000	0000	.000	0000	00001	0000.	.1000-01	000.
8056.	1.000	1.000	1.000	1.000	1.000	-	000		00001	0000.	0000	. 000	0000	0000	000-1	0000.	.1000-01	000.
8066.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1	0000	00001	00001	. 000	000.	000.	00001	00000	.1000-01	0000
8076.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	0000	0000	0000	000.	0000	000.	0000	.1000-01	000.
8086.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	0000		0000	0000	000	0000	0000.	10000-01	000.
. 3608	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000		0000	000.	000	0000	0000	.10000-01	000.
8100.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000	000	0000	000.	0000	0000	.000	0000.	100001.	000.
8116.	666.	1.000	1.000	1.000	1.000	1.000	1.000	000	000	0000	0000	. 000	000.	. 000	0000	0000.	.1000-01	.000
8120.	666.	1.000	1.000	1.000	1.000	1.000	1.000		0000	0000	0000	. 000	0000	0000	0000	.9401-11	.2000+01	0000
8130.	666.	1.000	1.000	1.000	1.000	1.000	000		0000	0000	0000	. 000	0000	.000	000.	.9401-11	.2000+01	.000
8146.	666.	666.	1.000	1.000	1.000	1.000	000		000.	0000	1 000	.000	000.	.000	000	.9401-11	.2000+01	.000
8150.	966.	666.	666.	1.000	1.000	1.000	000		00001	000.	0000	.000	0000	.000	000	.2163-06	.9300+00	000.
8166.	866.	866.	666.	1.000	1.000	1.000	000		0000	000.	1 000.	1 0000	.000	.000	000.	.2487-08	.1550+01	0000
8176.	866.	866.	666.	666.	1.000	1.000	000		000	0000	1 000.	.000	0000	.000	.000	.3649-05	.7000+00	.000
8186.	166.	166.	866.	666	1.000	1.000	000		000	0000	0000	1 000.	0000	. 000	000.	.1323-04	.5600+00	000.
								0000	000.1	1.000.1	. 000	.000 1	. 000	.000	0000	.2167-05	.8600+00	000.

B-30

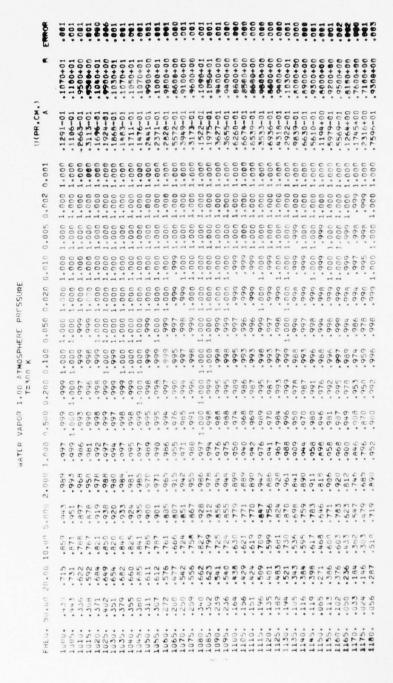


						0000	1010	T=30	0 × 0	A COE	EXE							
FREG.	10000	2000.	2000.	10001	500.0	200.0	100.0	20.00	20.00	10.00	2.000	2.000	1.000	0.500	00000	•	æ	FRROR
8196.	166.	166.	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	3013-06	1020401	000
8216.	.992	966.	866.	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1997-05	000000	
8226 .	866.	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	. A153-08	1350+01	000
8236 .	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.9401-11	.2000+01	000
8246	666.	666.	1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.2163-06	.9300+00	.000
8250.	166.	666.	1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	.3312-09	.1740+01	.000
8261.	. 993	166.	.998	666.	1.000	1.000	•-4	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.9075-06	.9700+00	.000
8276.	. 992	966.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.1159-05	.9600+00	.000
8280.	066.	366.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	90-6869.	.1040+01	.000
8296 .	166.	* 995	. 998	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.1325-05	00+0096	000.
9300	586	266.	156.	866.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.2405-05	.9500+00	000.
	100	066.	166.	666.	666	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.2088-05	.9500+00	.000
0350	166.	555.	555.	1.000	1.000	1.000	-	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	.6136-07	.1170+01	000.
	000.	1.000	1.000	0000.	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	*0000	.10000-01	.000
* * * * * * * * * * * * * * * * * * * *	0000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00000	.100001.	.000
9330	1.000	1.000	٠.	0000-1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	00000	.10000-01	000.
9396	0000	1.000	-	0000-	1.000	1.000	-	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	.0000	.10000-01	.000
	0000	1.000	1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.0000	.10000-01	.000
9290	0000	1.000	٠,	7.000	1.000	1.000	•	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.0000	.1000-01	.000
	0000	0000	٠.	000·	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	0000.	.1000-01	000.
	1.000	1.000	٠.	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	00000	.10000-01	.000
	0000	0000	٠.	0000.	1.0000	000.	1.000	1 * 000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00000	.100001.	000.
	0000	1.000	٠.	000.7	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	.0000	.10000-01	000.
	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	00000	.1000-01	000.
	000	0000	0000.	0000	1.000	0000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.0000	.10000-01	.000
B # 60			٠.	000.	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00000	.10000-01	.000
B475	000	000	4 -	0000	000	0000.	0000.	0000.	1.000	00001	1.000	1.000	1.000	1.000	1.000	0000.	.100001.	000.
848	000	1	1000	1000	000	1.000	1.000	0000.	1.000	1.000	1,000	1.000	1.000	1.000	1.000	.0000	10000-01	000.
849	1.000	000	000	000	000	0000	000.	00001	00001	0000.	1.000	1.000	1.000	1.000	1.000	0000	.100001.	000.
8506		000	0000	0000	0000	0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	*0000	100001.	000.
A510.	1000	000		0000	0000	0000	1.000	00001	1.000	1.000	1 .000	1.000	1.000	1.000	1.000	0000.	.10000-01	000.
B526	000	000	000	0000	000	000.	1.000	0000.	1.000	000.	1 * 000	1.000	1.000	1.000	1.000	0000.	.10000-01	000.
85.30	1000	000	000	0000	0000	1.000	1.000	00001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	.100001.	000.
2540		000	000	0000	0000	0000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	.10000-01	000.
8550	000	1	1.000	0000	000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	.1000-01	000.
ASKO.	1.000	1000	000	0000	0000	0000	0000.	000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	00000	10-0001.	.000
	5	7		000.	1.000	4.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	10000-01	0000.

B-31

	α	00000
	A FRROR	
	Œ	10000-01
	<	
		000000
	000.0	1.0000
	0.500	1.0000
	1.000	1.0001
	000.	0000
ERE	2.000	1.0000
TMOSPH	10.00	1.0000
CARBON DIOXIDE AT 1.00 ATMOSPHERE TERMOSPHERE	20.00	1.0000
DE AT 1.00	20.00	1.000
DIOXI	100.0	1.0000
CARBON	200.0	1.000
	500.0	1.000
	1000.	1.000
	2000.	1.0000
	5000.	1.0000
	10000	000000
	FREG. 10000 5000. 2000. 1000. 500.0 200.0 100.0 50.00 20.00 10.00 5.000 2.000 1.000 0.500 0.200	8570. 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 8590. 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000







	ERROR	000	100					200	.002	.003	.007	.001	.005	.005	.002	.002	.001	.016	.008	.002	+00.	.001	.003	900.	000.	.003	200.	*00.	6000				000	200	040	.025	.000
	Œ	7500+00	. A100+00	8700400	. A100+00	00000	7200+00	7400+00	.7600+00	.6900+00	.8100+00	.8200+00	.7500+00	.7200+00	.8000+00	.8000+00	.7200+00	.6800+00	.6200+00	.7900+00	.7100+00	00+0069.	.6700+00	.7000+00	.8100+00	.8100+00	00+00+9.	00+00+00	2000000	10000	6500+00	2900+00	7200+00	7600+00	.6700+00	.6500+00	.6200+00
	UIPR.CM.	.1963+00	.1445+00	1053+00	.1517+00	1000	.2798+00	.2823+00	.2824+00	.3904+00	.1731+00	.1823+00	.3292+00	.3460+00	.2538+00	.3371+00	.5732+00	.8954+00	.1331+01	.3713+00	.5269+00	.9880+00	.8329+00	.7653+00	00+9062	00+00+0	10471401	10+66000	1391+01	11327401	.2171+01	.4575+01	1726+01	1707+01	.2373+01	.4371+01	.4406+01
	0.001	1.000	1.000	1.000	1.000	1.000	666	666.	1.000	066.	1.000	1.000	066.	666.	1.000	1.000	866·	166.	.995	666.	666.	166.	866·	666.	566	560	100	006	166.	800	- 987	.961	989	166	166.	.960	.951
	0.002	666.	666.	1.000	1.000	1.000	666.	666.	666.	666.	666.	1.000	666.	866.	666.	666.	966.	.995	.991	166.	866.	666.	. 995	166.	666	080	070	976	166	966.	996	.926	626.	.987	.985	.928	.911
	0.005	866.	666.	666	666	1.000	.997	.997	866.	166.	866·	666.	.997	.995	666.	866.	066.	.987	.977	166.	966.	.987	.988	666.	166.	676	010	945	985	990	925	.841	.954	696.	.960	.856	.826
1.1	0.010	966.	766.	666	866.	666	466.	.995	966.	166.	.997	.998	166.	.991	166.	966.	.982	.975	.957	.988	.992	.975	916.	986	166	046	875	206.	.970	.980	.875	.743	.922	116.	.928	.778	.737
PRESSURE	0.020	266.	995	99g.	966.	866·	.988	066.	266.	.987	466.	966.	.988	.983	ħ66.	266.	996.	.953	.920	.978	.983	.953	955	5/60	200	200.	79.	857	.941	1961	.80a	.620	.876	<b>+06</b>	.876	929.	.629
	0.050	.980	.988	766.	686.	966.	.972	916.	.980	696.	.984	.991	.971	* 965	986.	.981	.930	868.	.837	.955	960	968.	106.	106.	270	. A17	633	.710	.876	606.	169.	.437	.788	.822	.767	.505	.461
ليا	0																																				
TMOSPHE 0 K	0.100 0	196.	876.	.988	626.	266.	646.	.956	.962	.942	.970	.982	846.	.934	.973	.963	.888	.830	.743	.928	.956	.824	.855	9000	010	.721	LA A A	.582	.791	.833	.582	.294	.692	.726	.641	.356	.322
1.00 ATMOSPHERE T=300 K							.912 .949			-			Ī			·	Ť	Ī	Ī	•	•	•	•	•					•	•	•	•	•	•	•	.208 .356	•
VAPUR 1.00 ATMOSPHE T=300 K	0.100	. 938	. 962	.978	.961	.985		.921	.926	. 495	946.	.965	.911	.892	646.	.929	.827	.731	.622	.888	. 869	121.	247.	000	200	665.	328	.433	. 699.	. 706.	. 1111.	.164	. 563	. 594	474.	•	. 191.
	0.200 0.100	.8d5 .938	.924 .962	.952 .978	.917 .961	.963 .985	.912	.845 .921	.850 .929	.791 .495	.891 .946	616.	.824 .911	.805 .892	.881 .949	.840 .929	.701 .827	.551 .731	.423 .622	. 795 . 888	. 740 .869	+2/· 666.	241 616	500. A07	769 . 945	397 . 599	.137 .128	.231 .433	. 699. 844.	. 405 . 706 .	. 444. 745.	.048 .164	.347 .563	.362 .594	. 229 . 474	.208	
VAPUR	1.000 0.500 0.200 0.100	.820 .8d5 .938	.A72 .924 .962	.912 .952 .978	196. 716. 758.	.923 .963 .985	.835 .912	.747 .845 .921	.748 .850 .929	. 672 .791 .495	. 918 . 891 . 946	.845 .919 .965	.714 .824 .911	. 699 . 805 . 892	. 787 . 881 . 949	.723 .840 .929	.560 .701 .827	.388 .551 .731	.263 .423 .622	. 195 . 795 . 888	998 . 740 . 464	#2/ 655 H/V	241. 616. 134.	500. 100. 174.	768 . 769 . 885	. 539 . 397 . 599	. 137 . 138	.231 .433	. 258 .448 .669 .	. 258 .405 .706 .	. 444. 745.	.011 .0+8 .164	.347 .563	.142 .362 .594	. 229 . 474	.014 .063 .208 .	.015 .062 .191 .
VAPUR	0.500 0.200 0.100	.718 .820 .845 .938	.A72 .924 .962	.837 .912 .952 .978	.762 .857 .917 .961	.840 .923 .963 .985	.614 .743 .835 .912	.615 .747 .845 .921	.748 .850 .929	. 525 . 672 . 791 . 495	.715 .918 .891 .946	.731 .845 .919 .965	. 564 .714 .824 .911	. 554. 698. 6805 . 455.	.649 . 787 . 881 . 949	.556 .723 .840 .929	.560 .701 .827	.229 .388 .551 .731	.263 .423 .622	888. 67. 674. 616.	698. 047. 464. 614.	75. 656. 111. 303.	241. 615. 134. 605.	100. 867 174. 894.	768 . 769 . 885	.110 .239 .397 .599	. 137 . 138	.033 .107 .231 .433	.104 .258 .448 .669 .	. 097 . 258 . 405 . 706 .	. 036 .117 .247 .444	. 101 . 111 . 0+8 . 164 .	.061 .182 .347 .563	3 .157 .142 .362 .594	. 020 .000 .229 .474	.014 .063 .208 .	. 101. 5005 .015 .007
VAPUR	1.000 0.500 0.200 0.100	.514 .718 .820 .805 .938	.583 .787 .872 .924 .962	.652 .837 .912 .952 .978	.565 .762 .857 .917 .961	.648 .840 .923 .963 .985	.614 .743 .835 .912	.389 .615 .747 .845 .921	.374 .617 .748 .850 .929	. 294. 197. 573. 525. 795.	.513 .715 .918 .891 .946	.502 .731 .845 .919 .965	.325 .564 .714 .824 .911	.324 .555 .699 .805 .892	.391 .644 .787 .881 .949	.289 .556 .723 .840 .929	.162 .388 .560 .701 .827	.070 .229 .388 .551 .731	.026 .128 .263 .423 .622	888. 67. 674. 616. 705.	100 047. 464. 014. 600.	427. 953. 114. 303. 050.	24/ 6/6 /3h 860 F00	100. 407 174. 894. A54.	288. 937. 853. 444. 611.	665. 765. 655. 011. 610.	.000 .008 .045 .137 .328	.002 .033 .107 .231 .433	.104 .258 .448 .669 .	. 407. 304. 835. 790. 60h.	.002 .036 .117 .247 .444	. 100 . 101 . 0.48 .164 .	.004 .061 .182 .347 .563	. 103 . 157 . 142 . 362 . 594 .	. 020 .000 .229 .474	. 100 . 001 . 014 . 063 . 208 .	. 101. 5015 .015 .000.
VAPUR	0 10.03 5.000 2.000 1.000 0.500 0.203 0.100	.514 .718 .820 .805 .938	.342 .583 .787 .872 .924 .962	.457 .652 .837 .912 .952 .978	.375 .565 .762 .857 .917 .961	.445 .648 .840 .923 .963 .985	.225 .395 .614 .743 .835 .912	.213 .389 .615 .747 .845 .921	.195 .374 .610 .748 .850 .929	. 146 . 297 . 525 . 672 . 791 . 495	.328 .513 .715 .918 .891 .946	.298 .502 .731 .845 .919 .965	.158 .325 .564 .714 .824 .911	.164 .324 .555 .699 .805 .892	949 . 194 . 644 . 649	.117 .289 .556 .723 .840 .929	.050 .162 .388 .560 .701 .827	.015 .070 .229 .388 .551 .731	.004 .026 .128 .263 .423 .622	888. 67. 674. 616. 705. 611.	98. 047. 464. 914. 891. 780.	421. 600. 111. 303. 000. 000.	24/ 6/6. /24: SBS. /80: 130:	100. 807 174. 894. 355. 100.	288. 267. 858. 444. 641. 750.	.002 .019 .110 .239 .397 .599	.000 .000 .008 .045 .137 .328	.000 .002 .033 .107 .231 .433	.001 .112 .104 .258 .448 .669 .	. 007. 304. 835. 780. 600. 000.	.000 .002 .036 .117 .244	.000 .100 .101 .048 .164 .	.000 .004 .061 .182 .347 .563	.000 .003 .057 .142 .362 .594 .	. 474. 925. 900020 .474	.003 .001 .014 .063 .208 .	. 101. 500. 510. 100. 000. 100.
VAPUR	1.000 0.500 0.200 0.100	.329 .514 .718 .820 .835 .938	.198 .392 .583 .787 .872 .924 .962	.241 .457 .652 .837 .912 .952 .978	.183 .375 .565 .762 .857 .917 .961	.225 .445 .648 .840 .923 .963 .985	.098 .225 .395 .614 .743 .835 .912	.077 .213 .389 .615 .747 .845 .921	.065 .195 .374 .610 .748 .650 .929	.047 .146 .297 .525 .672 .791 .495	.149 .328 .513 .715 .918 .891 .946	.120 .298 .502 .731 .845 .919 .965	.1147 .158 .325 .564 .714 .824 .911	.053 .164 .324 .555 .699 .805 .892	.065 .199 .391 .645 .787 .881 .949	.025 .117 .289 .556 .723 .840 .929	.007 .050 .162 .388 .560 .701 .827	.001 .015 .070 .229 .388 .551 .731	.000 .004 .026 .128 .263 .423 .622	888. 27. 674. 610. 705. 610.	. 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 .	#2/. 666. 11/1. 303. 000. 000. 000.	24/ 6/6. /24. 886. FPO. 150. 500.	. 012 . 041 . 234 . 444 . 471 . 501	200. 007. 854. 444. 681. 750. 300.	.000 .002 .019 .110 .239 .397 .599	898. 137 . 137	.000 .000 .002 .033 .107 .231 .433	. 6001 .061 .012 .104 .258 .448 .669	. 600 . 000 . 009 . 097 . 258 . 405 . 706 .	. 000 .007 .002 .036 .117 .247 .444	.000 .000 .000 .000 .011 .0+8 .164 .	.000 .000 .004 .061 .182 .347 .563	.000 .000 .003 .057 .182 .362 .594	. 474 . 926 . 020 . 020 . 474 .	. 003 . 208 . 001 . 014 . 063 . 208 .	. 191. 500. 500. 500. 500. 500.



		~	•	_	<b>m</b>			_	6	0		00	201	_	-	n	6	~	~	•	00	# 1	•	0	0	•	n	2	~ 1		n .	-	n	<b>.</b>	1	φ.	- (	٠.	-
		ERROR	.002	.00	.038	.01	.01	.01	.00	.00	.00	.02	.03	000	.00	*0*	.08	.00	.00	.03	*O.	00.	+0·	.00	.01	.00	.00	.00	00.	.13	00.	.00	.003	. 00	.03	.00	20.	.05	00.
		α	.6900+00	.6300+00	.6700+0n	.6900+00	.6800+00	00+00+9"	.6300+00	.7000+00	.7800+00	*60000+00	*6000+00	.7000+00	.7300+00	. 5200+00	.7400+00	00+00610	.7300+00	00+006%	00+00090	.7300+00	.6200+00	.5700+00	,7500+00	.6500+00	*6500+00	.6300+00	*6700+00	.5900+00	.6200+00	.6600+00	.5700+00	.6200+00	*6800+00	.6400+00	,5600+00	.6600+00	.7600+00
	U(PR.CM.)	4	.3849+01	*5796+01	.3866+01	.3585+01	. R782+01	.1073+02	. P187+01	*5525+01	.5316+01	.6873+01	01036+02	.8557+01	.7989+01	.7477+01	.5732+01	.5806+01	-1144+02	,9703+01	,1325+02	.9619+01	.8832+01	.1326+02	*1040+02	.9800+01	.1678+02	.1710+02	-1704+02	*1566+02	.2416+02	.2210+02	.2315+02	*2582+02	*5041+05	*2298+02	.2827+02	,1573+02	.1403+02
		0.001	.972	546.	546.	1960	.914	*883	206.	0960	.987	.887	. 843	.935	.951	.826	* 613	* 965	.922	.722	0769	.917	. 849	.780	.935	*895	.837	.798	. 843	. 705	*731	5 200	.657	*69B	.824	.755	.563	.793	. 018
		0.002	.950	.903	.952	046.	.861	608	.837	.929	4760	, R23	.760	.887	.916	. 738	.869	* 943	, 873	,615	.671	. B75	. 785	.682	.886	,831	.745	.706	.758	.600	.605	.701	,515	.563	.721	.637	.420	.709	.868
		900*0	,901	.816	.897	.889	.741	.672	.723	.867	.939	*70A	,616	.791	. 84n	,594	.794	888	.772	.461	.524	.792	,666	.519	.791	,713	.585	.545	909*	6443	* 400	, 50A	,318	.364	* 542	* 450	,234	.570	,764
		0.010	.843	.723	.827	. B32	.655	545	,614	.800	.884	.602	. 488	069.	.751	4472	.725	. 840	.659	. 344	.402	969*	.554	.380	.691	. 595	.435	.396	.458	.320	.243	,341	.183	.218	.386	.293	.119	2445	649
22045		0.020	.762	.608	.731	.754	.525	.39€	. 483	.70n	.79u	. 481	.351	.560	.625	.35n	.643	.757	.509	,235	.276	.566	.427	.240	.556	. 455	=276	.239	.295	.205	.116	.186	*081	.101	,231	*157	* 043	*302	. 4B7
. NO ATMOSPHERE PRESSURE		0.050	609*	.411	. 559	600	.316	. 202	.285	.511	,60¢	.308	.178	0.349	904.	.204	.503	.572	.276	.116	.121	.342	.250	.091	.331	.254	.100	.077	.105	.080	.024	4000	*015	.019	.073	+036	.005	.124	. 24!
MOSPHE	×	001.00	.456	256	405	464	165	. 087	14B	.334	.413	182	. 07R	.186	.227	.112	359	389	.120	040	040	.170	.129	. 02A	.162	.120	.026	.018	.026	* 022	*00*	.008	.002	.002	.016	*005	0000.	.036	.088
. NO A	T= 300	0.000	785.	101	25.2	2008	.057	.023	.053	.167	. 217	.080	.000	1000	.087	540.	194	190	030	0011	.006	.052	E 70 .	.005	. 047	.035	.003	.002	*00°	* 002	.000	.000	*000	0000	.001	.000	.000	+00·	.016
IAPOR 1		0.500	960.	000	000	110	777.	.001	500	.033	440.	.011	100	000	.008	0.00	0.36	2000	100	.080	000	.003	.003	000	.002	.002	000	.000	.000	.000	0000	000"	0000	000"	0000	0000	0000	0000	000
VATER VAPUR		000.1	100	400	000	100	000	000	000	000	5110	. 001	000	000	000	000	200	200	0110	000	000	000.	000	000	000	000	.000	.000	000	.000	.000	000.	.000	.000	.000	.000	.000	.000	000
		2.000	200	1100	200.	* 000	000	100	100.	.000	.000	000	000	000	000.	000	000	000	000	000.	.000	000	.000	000	000	000.	.000	.00h	.000	000.	.000	.000	.000	*000	.000	.000	*000	.000	ייטט.
		006.5	000	0000	0000	0000	0000	000	0000	000	.000	0000	000	0000	. 000	000	0000	0000	0000	000.	000	000	000	000	000	000	080	0000	.000	0000	.000	. 000	.000	.000	* 000	.000	* noo	.000	000
		10.00	0110	0	311.		.00.	000	0.00	000	0.00				Ond.	000	0000	0000	0000	000	000	000	000	000	0000	0.00	000	.000	000	.000	. non	W000*	Und.	.000	.000		0000		
		00.00	000	0000	0000	000.	000.	0000	0000	000	000	* 000	000	0000	000	0000		0000	0000	000	0000	000	000	000.	000.	000	000	000	000	. 000	.000	.000	.000	.000	. חחח.		.000		
		00.00			000.	. 000	0000	9000	0000	0000	0000	onn.	0000	0000	0000	1000	1000	.000	. 000	* 0.00	0000	000.	000.	*000	0000	0000	000	000.	000	0000	unn.	OHU.	000	.000	000	090	000	.000	No. of London
		Fict.u. 50.00 20.00		13/0:	1375.	1380.	1385.	1390.	1290.	* 00+1	14000	1410.	*****	1450.	1463.	*00**	1400.	1440.		1420.	*****	1400.	******		1470.	* 00+1	0000	1405	1500	1505	1510.	1515	1520	1525.	1530.	15.35.	1540.	1545.	1



	ERROR	.112	.011	. O. A.	.007	.002	.027	.002	.007	.003	.001	.003	.005	.012	.010	.003	.005	.202	.011	.027	900.	.022	.053	.010	.023	.002	.083	. n84	.008	000.	600.	440.	.000	.055	140.	.005	.012	000.
	æ	.6700+00	.5300+00	.7200+00	.6300+00	.6300+00	.7200+00	.9100+00	.7300+00	.7000+00	.7700+00	.7600+00	.6700+00	.6100+00	.6500+0n	.6800+00	.7A00+00	.6000+00	.6800+0n	.6500+00	.5790+00	.5100+00	1900+00	00+0049.	.5500+00	.6200+00	.6100+00	.5500+00	.7500+00	00+00-90	.5400+0n	.5900+00	.7000+00	.6500+00	.5000+00	.8300+00	.7600+00	.6400+00
	U(PR.CM.)	.1994+02	.1952+02	.2178+02	.1166+02	.1172+02	.6859+01	.3673+01	.4164+01	.5280+01	.4708+01	.5283+01	.9250+01	.1645+02	.1080+02	.1401+02	.1183+02	.1028+02	.1639+02	.1642+02	.2570+02	.2215+02	.2441+02	.1928+02	-1490+02	.1683+02	.1443+02	.1480+02	.2073+02	.2316+02	-2766+02	.1957+02	.1636+02	.1944+02	.1086+02	. AP53+01	.7443+01	.9017+01
	0.001	.752	.603	.814	.846	. 841	.919	966.	·980	.971	486.	.980	.934	.766	.863	. 865	.032	.772	. A13	.783	.600	.512	.855	177.	.713	.786	.751	.672	.842	.756	6110	.670	. A75	.750	.705	.070	.032	. A70
	0.002	459.	.472	.725	.771	.775	.885	.993	296.	940.	696.	.961	.888	699.	. A02	.798	. A89	.686	.778	.698	0440	777	.777	.671	165.	1691	654.	.562	PO4.	444.	. 172	.557	504·	.654	. 595	8 70.	.001	. A.5
	0.005	464.	.29₽	.569	249.	.650	.812	.979	.916	.884	.929	.913	.780	.50€	.685	.670	,80¢	.550	.619	.550	.28₽	.214	.630	.504	.421	.527	.512	.401	.655	.455	190	.394	199.	.480	.437	.895	.830	.711
	0.010	.364	.180	.421	.51A	.524	.735	926.	.855	.808	.872	.847	.675	.363	.564	.537	+04.	.436	474.	.415	.160	.118	.483	. 159	.292	.379	.387	.280	.503	.296	.101	.284	.518	.350	.317	474	.765	204.
PRESSURE	0.020	.224	.08₽	.260	.373	.373	.625	.911	.767	669.	.785	.752	.526	.220	.415	.376	.561	.320	.318	.270	• 066	• 052	.303	.212	.176	.224	• 250	.173	.326	.150	.03a	.151	₹44	.212	.200	.712	.660	·466
	0.050	.077	.020	.084	.178	.173	.433	.792	.610	.509	.614	.569	. 563.	.073	.210	.164	.318	.180	.124	.102	.000	60u.	.104	.063	290.	• 075	.110	.065	.113	.033	+00·	040.	.135	+90·	960.	.480	404.	.264
ATMOSPHERE 100 K	0.100	.017	.003	· 013	.00A	.005	.267	.631	.456	344	++++	.392	.137	.010	.091	.055	.142	•08₽	.034	.057	.00.	.001	.022	.012	.016	• 01 b	.034	.013	•050	.000	.000	900.	.039	.015	.00	.206	. 50.	.150
1.00 AT	002-7	.001	000.	.001	. n14	. 114	.120	.419	.284	.184	.256	.210	240.	.002	.024	.000	.136	• 025	.004	.003	000.	000.	101.	.001	200.	200.	+000.	. 000	.003	.000	.000	COC.	5000	.001	-00.	1000.	.110	240.
MANOR	0.5.0	000.	000.	0000	000.	000.	.017	.140	900.	0+0.	+00·	940.	.003	000.	.001	.00.	.0.1	.001	000.	.000	onu.	000.	000.	000.	000.	0.1.0	100.	0.0.		000.	6000	0 10.	0 13 11 11	000	9.7.	110.	21.	0.10
7,17,1	. 1000	000.	000.	300.	OPU.	000.	· noi	.726	. 715	500.	.00.	500.	000.	000.	600.	000.	.000	900.	000.	070.	900	.700	000.	000.	. 000	000	100	0110		· Buth		9,40	001.	0110			J	
	2.003	.00.	.000	. 200	100.	.000.	.003	.0.11	.101.	.00.	.000	.00.	.000	.000	anc.	.00.	.00.	.000	.00.	.00.	.000	.031	.000		.00.	.00.		00.			0		0110					
	3.110	.000.	.000	.000.	- 135	710.	0.000	· () () ·	. nor	300.	000.	JUL.	300	000.	0000.	· not	316.	100.	1000	. 460	. 000	.000	170.	.000	000.									100.		Chy.		
	10.01	0.00.	· 0.00	.600	.000	. 11.	. )	- 211.	. 10.		.000	. 70.	.0c.	.00.	.000	.000	.000	.00.	• 000	. (1)()		.00.	100.	000.	.00.		. 1914											
	0.00	. 11/1/1		. 100	. 25.0	.000	61.0.		. 201	600.	Cue.	04.0	000.	0000	0000	0006	. 440	יייים מייי	000		6.11.0	01.71	0000	0.000	Day.			Dan.										
							. 113			0000		000.	. 76.		William.			Con.	000.	1.17.		. 000	Byro.	1,000	· Just													
		12,00	Lich.	1 37 3.	15/11	10/10	.1.01	1000	177.1	1.5,50	Long.	1505.	1010.	1010	Luzu.	105.00	1039.	1035.	10401	10.00	lobu.	10001	Toca.	1000.		.0.01		1000						11111				



. 4871 . 7559 . 906				E II			7	. 122 .247	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				District Control	110000000000000000000000000000000000000	
. 906		*	322		*	. 4441 .	. 247 .441 .	7	. 141 . 122 . 247 . 441 .	.003 .041 .122 .247 .441 .	.000 .003 .041 .122 .247 .441 .	.000 .000 .003 .041 .122 .247 .441 .	. 000 .000 .001 .122 .247 .441 .	.000 .000 .000 .003 .041 .122 .247 .441 .	. 144. 742. 521. 140. 500. 000. 000. 000.
.906			ACE		.188 .	.188	.056 .188 .	.012 .056 .188 .	.001 .012 .056 .188 .	.000 .001 .012 .056 .188 .	. 000 .000 .0012 .056 .188 .	. 000 . 000 . 001 . 012 . 056 . 188 .	. 000 . 000 . 001 . 012 . 056 . 188 .	. 000 .000 .000 .000 .012 .056 .188	. 000 .000 .000 .000 .000 .000 .000 .000
. 906.			0000		+175	*	*	* 022	. 550. 510. 100.	* 550 ° 570 * 101 ° 500 °	* 550 - 510 - 100 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 - 500 -	* 550 * 570 * 100 * 100 * 100 * 100 *	* 550 * 570 * 100 * 100 * 100 * 100 *	* 550. 510. 100. 500. 500. 500. 500.	* 550 * 510 * 100 * 000 * 000 * 000 *
506°	4		+639		.511	100 010	.018	100 ACO	. 076 100 160	. 027 . 770 . 100	. 000 . 007 . 770. 760. 000.	* 816. 71. 770. 760. 800. 800.	* 816. 71. 770. 760. 800. 800.	* 816. 71. 770. 760. 800. 800.	* 040 * 000 * 000 * 000 * 070 * 070 *
			1000		#00°	•	0000	106 930	. 020 - 106	000. 000. 000. 100.	. 000 . 001 . 000 . 100 .	. 000, 000, 000, 000, 000, 000, 000,	oxe 301, 050, 100, 000, 100, 1	. DEC. Ant. 050. 100. 000. 100. 100.	. 000 . 000 . 000 . 000 . 000 . 000 . 000 .
. 060	22 .836	1722	100.		201.		.036	. 0006 . 036 .	. 000 000 000	. 000 . 000 . 000.	. ACC. 300. 000. 000. 000.	. 980. 900. 000. 000. 000. 000.	. 980. 900. 000. 000. 000. 000.	. 980. 900. 000. 000. 000. 000.	. 360. 300. 000. 000. 000. 000. 000.
			X7X		.0.4.			. 085	. 025 . 085	.000 .004 .025 .085 .	000 .000 .004 .025 .085 .	.000 .000 .000 .004 .025 .085 .	.000 .000 .000 .004 .025 .085 .	*000 *000 *000 *000 *004 *025 .085 .	.000 .000 .000 .000 .000 .004 .025 .085
* 771 * 1405402			.457		.297		.115	5 .035 .115 .	. 005 .035 .115 .	.000 .005 .035 .115 .	. 115 .035 .035 .115 .	. 211. 350. 300. 000. 000. 000.	. 115035 .030 .000 .035 .115 .	. 000 .000 .000 .000 .035 .115 .	. 000 .000 .000 .000 .035 .115 .
200.			.631		1664 .		. 290	. 143 .290 .	2 .044 .143 .290 .	.002 .044 .143 .290 .	. 000 .002 .044 .143 .290 .	.002 .044 .143 .290 .	. 000 .002 .044 .143 .290 .	. 095, 241, 404, 500, 000, 044, 143, 290	. 095. 241. 440. 500. 000. 000. 143 .290
.871			.564		4425		. 222	.102 .222 .	.029 .102 .222 .	.001 .029 .102 .222 .	. 222 102 102 222	. 222 102 102 222	. 222 102 102 102 100.	. 222 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 102 1	. 522 101 102 102 102 102 102 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103 103
.757		154.	,296		.156		.038 .	.006 .038 .	. 000 .006 .038 .	.000 .000 .006 .038 .	. 000 . 000 . 000 . 038 .	. 000 . 000 . 000 . 038 .	. 000 .000 .000 .000 .006 .038 .	. 850. 300. 000. 000. 000. 000. 000.	. 850, 300, 000, 000, 000, 000, 000, 000, 0
.825			*412		-263		.101.	.030 .101	.030 .101	. 101 030 . 030 . 101.	. 101. 050. 200. 001. 001.	. 101. 000. 200. 000. 000.	. 101. 050. 200. 001. 001. 000.	. 101. 000. 200. 000. 000. 000.	. 101. 050. 200. 000. 000. 000. 000. 000.
	52 ,857		1642		*506		. 303	. 107 . 303	. 107 . 303 .	. 505. /61. 060. 500.	* 505. /CI. OCD. DOO. OCO.	. 200. /CI. OCD. COO. OCO.	. 505. /cl. oco. coo. coo. coo.	. 606. /61. 660. 600. 600. 600. 600.	. 500. Tel. 200. 200. 000. 000. 000.
			.635		4 492	•	•	.287	. 185. 841. CCU.	. TAS. 841. COU. COU.	. T85. 841. 500. 500. 000.	. T85. 841. 560. 500. 000.	.000 .000 .017 .000 .000	. 785. 841. 500. 500. 500. 500. 500.	. 785. 841. 500. 500. 500. 500. 500.
. 967	•	,816	.711		676		. 576	* 2000 . 2000	* 57C	200 000 000 000 000 000 000 000 000 000	- 000 - 050 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000	- 000 - 050 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000 - 000	. 000 . 000 . 050 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000	. 000 . 000 . 000 . 000 . 000 . 000 . 000 . 000 . 0	. 000 .000 .000 .000 .000
. 986.		4934	.880		-747	4	4	1 020 100	200 - 200 COO.	. 017 . 000 . View . 020 .	. 050. 117. 500. 100. 100. 100.	. 050. 117. 500. 100. 100. 100.	.000 .000 .017 .000 .000 .000 .000	. 000 . 000 . 110. 500 at a	. 626. page cas, 200. con, 000. 000. 000.
. 891		*	101		25.00	CEN. CTC.	* 070*	* 070* 070	* CTC* 007* 500* 0	* CTC* BOX' 500' BOO'	* CTC* COTT - COC - CTC* - CTC*	. CTC: CGT: 500. 000. 000.	* CTC* COTT - COC - CTC* - CTC*	. CIC. SALL SOC. BOO. COO. WOR. BOO.	. CIC. SOL. SOC. DOG. DOG. 100. DOG. DOG.
0.000	746	704	K7E		1000 ·		305	.145 .305 .	. 044 . 145 . 305 .	.003 .044 .145 .305	00003 .044 .145 .305 .		. 305. 341. 344 .145 .305 .	.000 .000 .000 .003 .044 .145 .305 .	.000 .000 .000 .003 .044 .145 .305 .
920			.656		496		.286	.286	.047 .143 .286 .	.004 .047 .143 .286	.000 .004 .043 .286	.000 .004 .043 .286	. 000 .000 .004 .143 .286	. 286 . 141 . 740 . 000 . 000 . 143 . 286 .	. 000 . 000 . 000 . 000 . 000 . 000 . 000 .
* 1			. 433		1279		.113	0 .041 .113 .	. 611041 .113 .	.000 .010 .041 .113 .	. 113 . 010 . 010 . 000 . 000 .	. 100 .000 .010 .041 .113 .	. 211. 140. 010. 000. 000. 000.	. 211. 140. 010. 000. 000. 000.	. 111. 140. 010. 000. 000. 000. 000. 000
0 40			.767		*659		* 462 *	, 306 ,462 ,	7 .167 .306 .462 .	.047 .167 .306 .462 .	. 108 .047 .167 .306 .462 .	.047 .167 .306 .462 .	. 108 .047 .167 .306 .462 .	. 294. 306. 791. 790. 304. 000.	. 294. 000. 167. 167. 167. 308. 462
		. 966	285 ×		·882		,754 ,	4 ,602 ,754 ,	. 404 . 602 . 754 .	.143 .404 .602 .754 .	. HOI . 143 . 404 . 602 . 754 .	. 427, 508, 404, 541, 108, 100,	. 143 . 164 . 602 . 754 .	. 407, 508, 404, 414, 404, 400, 754,	. 754 . 602 . 404 . 143 . 143 . 404 . 602 . 754 .
048824, 789,	n , n73		. A89		v804	*	,62A	, 45A , 62A ,	* 459 , 458 , 658 ,	, 455 , 450 , 450 , 628 ,	* 459 , 451 , 451 , 658 ,	. 629 , 450 , 450 , 629 , .	. 629 , 450 , 450 , 629 , .	. 628 . 450 . 450 . 450 . 450	. 629000000000000000.
.894 .6837+0			* 659		545	*	*	1,222 ,365 ,	. 222 . 365	. 252 . 252 . 410 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00 . 4.00	. 200 . 222 . 365	. 200. 222. 891. \$10. 100. 100.	. 200. 222. 891. \$10. 100. 100.	. 252. 252. 000. 000. 000. 000.	. 252. 252. 880. 400. 400. 000. 000. 000.
			.509		2000	166. 167.	6654	* 102 * 107 *	. 76% AQ1. 050.	. 059. AGT. 050.	.011 .059 .258 .45E .45E	.011 .069 .258 .u.ss .can	.011 .059 .258 .45E .45E	.000 .001 .011 .069 .348 .448 .448	.000 .000 .001 .011 .069 .258 .468 .448
.988 .4296+0	*	*	. 894		5100		* ****	1000	1416. App. 1417.	.171 .416 .600	. 040. 171. 040.	.171 .416 .600	. 040. 171. 040.	. 000 . 171, P40, d00.	. 000 . 000 . 000 . 000 . 171. 171. 040. 000. 000.
.991 .3006+01			1923		5000	*	* 137	100 000	. 167	* 157 # #EC# TAC. 000.	. 121 . 190 . 154	. 021 . 090 . 267	*002 .021 .090 .257 .00*	*000 *002 .021 .090 .057	*000 *002 .021 .090 .057
*			.819		103		* 000	* CO: 074	* 000 mm 001	000 004 000 MOO.	. 016. 024. 103. 010. All.	. 010. 024. 103. 100. A10.	.002 .016 .064 .100 .400 .	.002 .016 .064 .100 .400 .	* 000 * 000 * 000 * 010 * 000 * 000 *
,930 ,4135+0;			126		600	*	* DD+ *	* 505 000	* 584* 040* 557*	1084 . ORA . ORA . C. C	.010 .084 .355 .340 .489 .	.010 .08% .355 .3489 .	*002 .019 .08% .356 .050 .000	.002 .019 .084 .354 .346 .489 .	*000 *000 *000 *010 *010 *054 *054 *054
.965 .3942+0		.886	, 829		907	*	* 010*	* C/C+ 671.	* 0,00 671 003	1010 FLT 002 - 181 -	. C.	. C.	. C.	010, 011, 002, 181, 181, 010, 010,	.000 .000 .010 .010 .000 .000 .
		.930	.889		827	*	107.	, 107 , 100 ,	, ID/ . / OC . FOR .	, 101. 100. FOR. 504. A	, 107. 100. 100. 100. 101. 101. 101. 101.	, 107. 100. 100. 100. 100. 100. 100. 100.	010, 06, 204, 205, 307, 310, 0	000 010 000 205 205 040 010 000 0	, 10). 100. 100. 100. 100. 100. 100. 100.
.987 .2713+0		7760	906		0 10	000 .840		* 001. 100.	. 000 × 000 .	. 05/. 110. 000. 201 7.00. X	. 00/. 120 . 000 . 200 . 200 . 10. 1	. 00/. 120 . 000 . 200 . 200 . 10. 1	.001014004004004.	.001014004004004.	. 000 . 000 . 001 . 10. 100. 000. 000.
.4362+		.850	.790		698		* 4004	3 366 F311 5	. 215 . 366 554	2 .054 .215 .364 .504 .	. 012 . 014 . 215 . 364 . 510 .	. 012 . 014 . 215 . 364 . 510 .	.001 .012 .054 .215 .354 .		.000 .001 .012 .054 .215 .354
.935 .4402+0	*	.838	.770		678	. DIA . 67A	* ****	. 410. 000.	. PIC. 000: C13:	. PIC. 000: 543: 500. 0	. 41C. 00C. C.C. COU. UNU.	. PIC. 000: 543: 500. 0	. 41C. 000. CCO. CDO. OUT. 000. C	. PIC. 000. TCO. CDO. DUO. 000. 000.	. PIC. 300. 750. 600. 000. 000. 000.
+9425+	447.	.670	.550		410		. 612.	. 6779 . 6679	. 613. 660. 30.	. 613. 660. 30.	• 672. 660. 30. 30.	• 672. 660. 30. 30.	• 672. 660. 30. 30.	• 672. 660. 30. 30.	• 672. 660. 30. 30.



	ERROR	. 023	.041	.002	.024	.055	.002	+000	000.	.026	.018	.010	000.	.039	690.	.011	.001	.020	.001	.024	.023	.012	.029	.003	.016	1000	0000	.001	.032	+10.	.001	.001	.005	.003	.018	.015	000.	2000
	α	.6000+0n	.8200+00	.8100+0n	00+0064.	.7100+00	.7800+00	.7400+00	.7800+00	.5300+00	.6400+00	.8200+00	.9200+00	.8900+00	.5700+00	.5700+00	.7300+00	.8900+0n	.7100+00	.5800+00	00+0009.	.7300+00	.8700+00	.7700+00	.5600+00	.6300+00	.8700+00	.8900+00	.6400+00	.5300+0n	.7500+0n	.7100+00	1900+00	.7200+00	.6300+00	.7000+00	.7700+00	7100+00
	U(PR.CM.)	.3338+01	.1861+01	.2134+01	. 1394+01	.6665+01	.1654+01	.1760+01	.1655+01	.2914+01	.1621+01	00+4540.	00+0869.	.1630+01	.4590+01	.3154+01	.1156+01	.7081+00	.1691+01	.2419+01	.2193+01	.1280+01	.5068+00	.8258+00	.1892+01	.1342+01	.1779+00	.3680+00	.1251+01	.2334+01	.8583+00	.6299+00	.4633+00	.6738+00	.1609+01	.7580+00	.4118+00	.5910+00
	0.001	. 052	160.	966.	.913	.937	366.	666.	566.	646.	× 20.	000.	000.	060.	.925	.956	\$66.	866.	,005	196.	. 073	966*	066.	666.	. 082	. 988	060.	1.000	.986	.071	966.	A66.	000.	M60.	. 980	960.	060.	000
	0.002	.919	466.	166.	.864	96₩.	166.	.985	160.	.912	926.	166.	866.	.983	. A71	.926	166.	966.	066.	.936	.951	166.	166.	866.	• 965	.977	6660	660.	470.	140.	. 993	966.	866.	160.	.977	. 089	866.	800°
	0.005	.855	.986	.977	.775	.810	776.	.96€	776.	.840	.921	€66.	966.	196.	.783	.862	976.	.980	916.	.885	.907	.970	166.	766.	.925	.95n	.997	466.	246.	.893	, 98u	066.	366.	666.	.950	.977	966.	766
	0.010	.789	.972	.937	.689	.711	.957	.938	.957	.764	. 885	.987	166.	. 943	049.	.789	.959	046.	450.	. 829	.853	.959	.987	. 98А	.877	. 915	760.	166.	.915	. 932	026.	. 982	066.	.984	. 915	.960	. 992	989.
FSSURE	0.020	.702	846.	.921	.586	.600	.924	.896	.924	.67a	. A3A	476.	.983	.911	.576	£69·	.930	.961	.914	.756	.781	.925	.975	. 977	.812	.864	. 999	160.	.869	.750	040.	596.	.981	.970	.864	.037	.984	a70.
THE PR	0.050	045.	. 984	. 939	. 434	.421	.849	.810	. 845	.529	.752	.937	496.	* 844	.405	.540	.868	.918	.820	.629	•656	.847	: 943	140.	649.	.769	476.	.981	.784	,611	.902	.925	.954	.932	.764	. AB7	.962	740.
TMOSPH	.10n	.410	1164.	.734	.319	.276	.792	.709	.752	50t.	*66A	.805	.921	.759	.271	.410	961.	.807	.713	.509	.541	.760	906.	.842	.582	.677	4.951	596.	.700	.488	.868	.876	.918	.883	.659	.82u	.931	000.
1-00 ATA	0.200	.271	.650	.561	.216	.141	.618	.573	.618	926	.558	1994.	. A55	.636	.153	+76.	269.	164.	. 575	. 372	.414	.645	. 941	. AU7	.451	. 567	.014	. 330	865°	. 356	.769	106.	. 461	. 011	.531	· 74A	. ABB	. 930
AF UR	005.1	.116	.372	466.	660.	.016	.379	7447	. 179	.156	+774°	.607	163.	.410	8+0.	,124	. 491	.641	. 352	.195	.236	5445	.712	.623	.270	. 3 4B	. A20	* P.55	.431	. 195	500.	. 674	.745	.608	. 739	.642	.779	600
n Tt. P	. 000	.039	156	.116	.035	onu.	161.	.175	161.	. 159	.211	.400	960.	*226	.012	540.	.312	. 471	.185	£60.	.118	3150	.503	. 11.37	101.	100.	.642	.702	. 28B	.100	.433	.533	.615	.514	. 195	. 1254	1694.	F 47.7
	**00.*	. nue	. n37	.024	. 00 a	1000	. 059	.055	.059.	.010	*076	.187	4.265	545U*	.001	.00%	.147	.284	.000	* 031	* 030	.121	. 373	.241	.003	.13+	* 6504	* 50 th	.150	.037	140.	.361	24/7.	.350	. n84	.200	66 h.	11/2
	000-0	.000	.001	.000	000.	. non	.003	.003	* n03	.001	* 000	. 727	140.	.000	.000	0000	.024	+950 *	\$000	.002	.003	+017	.128	.056	+010	8066·	.216	.212	* n.53	* 004	.056	.141	101.	.112	+013	.100	.241	157
	10.00	000.	Dillo.	.000	0.000	.000	* 0 (m)	.000	.000	.000 ·	* 0.00	· 003	.00%	000.	.000	.00r	C110.	# 0 (H	5ng.	. AL.	A.0.4	100.	4006	"Unu	* 001	* 011 V	* Up 3	+ GO *	* (11) *	.000	* 0 0 d	. 040.	. Jun	· 059	. 00.1	67U.	. 30%	0.114
	70.0m	000.	. 111111	. Unn	.000	.000	.000	. 37d	.000	. 000	*000	. 900	.000	.000	.080	.000.	000.	.030	0000.	0.006	. 300	000.	*/UU1	.000	.003	.079	* 11.10	16 U. 11. 4	.000°	. 1100	*000	6911.	100.	*003	040.	200.	0110	71117
	Su. et al	. 00.	0000	. Dunti	.000	. July	* JUN	. 300	* UUN	But.	con.	car.	000.	0000	0000	.000	. 000 ×	. 40.3	nun.	Onn.	1000	0/10 ·	( " () *		onr .	100		1110 *	Bolt.	. 1.71		* DINO.	· Curb	Driver.	. Ulli	* 10 O D.	4 dill.	P. 15.10.11
	r. 14-14	1,72,50	1351.	14300	1.3411.	1 14.2.	1 Jbu.	1750.	1 Four.	1,460.	13/75	1373.	1 4001.	134404	1490.	1.993.	2003.	ZUILT.	2010.	2015.	2020 ·	2027.	2030.	40.50	21414	40405	2J711.	20%24	£0203	Same.	2370.	2073.	durin.	2027.	50.11.	Zugo.	21,300	2.111.



	FRROR	.001	.007	.001	.001	.001	.001	.003	.001	000.	.001	1000	1000	.001	0000.	.010	.002	-005	.001	.001	.002	.003	.001	n00.	1000	.002	.003	.001	* 005	600.	.001	.001	000.	.000	.001	2000	000.	-005
	0.	.8800+00	.8600+00	.9200+00	.1050+01	.9800+0n	.9700+00	.1040+01	.9300+0n	.9100+00	.9500+00	.1150+01	.9300+00	.1020+01	.1120+01	. ADDO+00	00+0000	.1210+01	.1100+01	.1080+01	.9600+00	.1120+01	.1160+01	.1050+01	00+0066*	.10000+01	.1210+01	.1150+01	. R100+00	.8300+0n	.1080+01	.1180+01	.1030+01	00+0000.	.1170+01	.1110+01	.12nn+01	.1150+01
	H (PR.CM.)	.5890-01	.5725-01	.4642-01	.2243-01	.3120-01	.1106-01	.2460-01	.3638-01	.4204-01	.3534-01	.1414-01	.2659-01	. 2256-01	.1923-01	.7205-01	. 3373-01	.8693-02	.1476-01	.1555-01	.3192-01	.1457-01	20-5966.	.1496-01	.2165-01	.2156-01	.8016-02	.1094-01	.6548-01	.5002-01	.1400-01	. A635-N2	.1854-01	.*651-01	- A924-02	.1115-01	50-048y.	.1033-01
	0.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.00 6 0.002	1.000	•	-	-	-	1.000	erd.		***	7	1.000	-	**	1.000	1.000		e	***	-	1.000		604	-	1.000	-	-	***	-	-4		-	7	gring	1.000	1.000	1.000	1.000
		1.000	***	1.000	1.000	1.000	1.000	1.000	-	1.000	1.000		*	***	*	066.	*	-	•	Serve)		-	•		-	1.000	-	gred.		-	1-4	-	-	1.000	1.000	1.000	1.000	1.000
LI	0.010	660.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	*-	-	gest	1.000			1.000	-	-		•	1.000		-	-					•	•	•		-	•	-	1.000
*TMOSPHERF PRESSURE SPO K	n.020	000.	666.	. 999	1.000	060.	1.000	1.000	166.	000.		-		1.000	1.000			1.000	-	•			-	-	•	-		-			-	•	•		-	-	•	1.000
HEFF D	0.050	700.	100.	906.	* 990	866.	. 000	666.	700.	. 99A	666.			•	606.	266.		-	-	***			**	p-d	****		-	1.000			**	-	666.	106.	-	-	.000	1.000
TIMOSPI	9.100	156	550.	1001	060.	166.	.900	, 99A	466.	966.	166.	066*	066	666.	* 940	.984		gran		-	566.		-	-			1.000	1.000	\$60.		1.000	1.000	166.	. 995	1.000	1.000	1.000	066.
1.00 T=3	0.500 0.200	196.	U66.	. 093	16U.	166.	\$ 966 .	y66.	166.	666.	966.	.090	166.	166.	166.	. 975	* 395	1.000	066.			. 995	1.000	1.000	. 39B	. ng7	1.900	1990	. 973	· 386	.090	1.000	566.	u66.		-	1.000	400.
JAPUP	0.500	0, 0,	.977	.01	\$60.	0.76.	10.00	06.00	1907	000.	49.16	. 073	960 *	#60.	.093	. 0-1	060.	666.	1000	1600	A	106.	010.	600.	965.	40.44	666.	5666	9.0.	.071	* 998	. 000	* 95B	.977	070.	010	1.000	. 096
m.Tt.P	1.000	.003	* ADB	+400	PMO.	.072	. 07H	* Chis.	. C. 744	× 90.2	.1.73	too.	.091	100.	540.	. 74	1957	. 047	v6n.	. 7.44	* 000	* 1979	4650	LAL.	160.	760L *	16.1.	afou.		770.	160.	066.	. a7B	.968	100.	166.	. nya	166.
	2.00	184.	110.	.931	.76.	+ 40.	. 054	. 45.	H +00 .	. 20.	100.	. 01:	* 94	. 77	100.	. Ans	1,76.	. 9B	· 64	WHILE .	170.	i au			. 030			ran.			. 96.	766.	00.	520.	66.		200	. 96
	2.00	. 76.	. 141	* m2"			* 11.13	* F 1 2	Chip*	. 9.5-	· Marie	. (1)		.000	64.	.75	114.	* 3/4×			. 3.		* 17.							. 187.				, n .	. 25.			
	10.			11/100	* J. L.	7 .	. 4.7 4	17.1	*733	.71.	.7. ,	.7.1	* 33.7		11.	119.	. 7 .		* 1.2				0,00			11.					£ 14.4			. 14		. 10	1114.	
		. 4. 7. 4.	*1 0 to *	. 4.7.4.			. 71.		1147.		. 37		1,200			10.70		. 7											1		the state of		*					
	-	. 1.00		* 50. 1	1777	1000	1000	****			OF THE	17.74	. 1.		. 57.		No. of Street, or		1						100			* 7.5			. 700					74.		. 14
	For	41,477	* 1102	d 3117 .	cul.	c.31.3.	43.1.	** AF 3	437.1	44 CAS	534	47.400	2377.	4 3 5 D	- TOP -	Call L.				47.70	*11.67		* / T	* 1	* 1 1 7	* * * * * * * * * * * * * * * * * * * *	W 45 1			× 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100 × 100	* * * * 2			*****	4.7		* * * * * *	2 1 1 1 2



					100					100	.001	.001	.002		. 982	. 084	.000	. 962	.080	.006	.000	.003	9000	.000	.000	.011	000.	000.	.001	000.	000.	000.	100.			410	242.
### VAPUR 10.00 5.000 1.000 0.500 0.500 0.500 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.		æ	1020+01	1180+01	1180401	1110	10101	110+011	1040061	1080+01	1350+01	.1180+01	.1300+01	.1060+01	.1030+01	.1210+01	.1040+01	.1090+01	.1130+01	.5800+00	.1130+01	.5600+00	.1010+01	.1220+01	.1030+01	00+0006"	.1160+01	.1180+01	.8900+00	00+0016*	.1150+01	1040401	1000000	BEODEOUT.	. M100+00	9700+000	4 7 1 2 2 2 2 2 2 2
**APÉR VARUR 1.00 A**HOSPHERF PRESSURE  **JSF -697 -885 -997 -986 -991 -997 -998 -999 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.00		U(PR.CM.)	.1712-01	.8246-02	- A053-02	1066-01	1000-01	. 990 X-02	7884-02	1036-01	.4326-02	.8355-02	.5080-02	.1355-01	.1393-01	,7883-02	1729-01	.1399-01	,1152-01	.4711-01	+1147-01	.3318-01	.1851-01	.7528-02	.1942-01	10-6961	.9634-02	.8793-02	.4506-01	1068-01	.1061-01	1010111	1127-01	.2475-01	.7290-01	.3502-01	
#47ER VAPUR 1.00 A.100 F.00 F.00 F.00 F.00 F.00 F.00 F.00		0.001	1.000	1.000	1.000	1.000	000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
#47ER VAPUR 10.00 ATMOSPHERE PRESSURE  135.007 10.00 5.007 2.007 1.00 ATMOSPHERE PRESSURE  135.007 10.00 5.007 2.007 1.00 0.20 0.10 0.10 0.05 0.02 0.010  135.007 10.00 5.007 2.007 1.00 0.20 0.10 0.10 0.10 0.10 0.10 0.10		0.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.0000	1.000	1.000	1.000	1.000	1.000	7.000	1.000	1 000	1 000	1.000	1.000	1.000	1.000	1.000	
### VAPUE 1:00 ATMOSPHERF PRESSURE    1.376			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.600	1,000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1,000	1,000	1.000	1.000	1000	1.000	1.000	1.000	1.000	1.000	
**ATER VAPUR 1.00 A THOSPHERE  **J56 .697 .835 .912 .967 .948 .991 .997 .998 .99  **J56 .741 .887 .942 .992 .998 1.000 1.000 1.000 1.000  **J56 .741 .887 .942 .992 .998 1.000 1.000 1.000 1.000  **J56 .741 .887 .952 .993 .998 1.000 1.000 1.000 1.000  **J56 .741 .887 .955 .994 .998 1.000 1.000 1.000 1.000  **J56 .754 .891 .955 .994 .998 1.000 1.000 1.000 1.000  **J56 .754 .891 .955 .994 .995 1.000 1.000 1.000  **J56 .754 .891 .955 .994 .995 1.000 1.000 1.000  **J57 .891 .995 .995 .996 .996 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .991 .997 .999 1.000 1.000  **J58 .755 .991 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .991 .991 .997 .999 1.000 1.000  **J58 .757 .994 .995 .995 .999 .999 1.000 1.000  **J58 .757 .994 .991 .997 .999 1.000 1.000  **J58 .757 .994 .991 .997 .999 1.000 1.000  **J58 .757 .994 .997 .998 .999 .999 1.000 1.000  **J58 .757 .994 .997 .998 .999 .999 1.000 1.000  **J58 .757 .994 .997 .998 .999 .999 1.000 1.000  **J58 .997 .999	t <sub>el</sub>	0.010		-	1,000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1 000	000	1.000	1.000	1.000	666	1,000	
**ATER VAPUR 1.00 A THOSPHERE  **J56 .697 .835 .912 .967 .948 .991 .997 .998 .99  **J56 .741 .887 .942 .992 .998 1.000 1.000 1.000 1.000  **J56 .741 .887 .942 .992 .998 1.000 1.000 1.000 1.000  **J56 .741 .887 .952 .993 .998 1.000 1.000 1.000 1.000  **J56 .741 .887 .955 .994 .998 1.000 1.000 1.000 1.000  **J56 .754 .891 .955 .994 .998 1.000 1.000 1.000 1.000  **J56 .754 .891 .955 .994 .995 1.000 1.000 1.000  **J56 .754 .891 .955 .994 .995 1.000 1.000 1.000  **J57 .891 .995 .995 .996 .996 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .891 .991 .991 .997 .999 1.000 1.000  **J58 .755 .991 .991 .997 .999 1.000 1.000 1.000  **J58 .755 .991 .991 .997 .999 1.000 1.000  **J58 .757 .994 .995 .995 .999 .999 1.000 1.000  **J58 .757 .994 .991 .997 .999 1.000 1.000  **J58 .757 .994 .991 .997 .999 1.000 1.000  **J58 .757 .994 .997 .998 .999 .999 1.000 1.000  **J58 .757 .994 .997 .998 .999 .999 1.000 1.000  **J58 .757 .994 .997 .998 .999 .999 1.000 1.000  **J58 .997 .999	FSSURE	0.620	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1 + 000	066	000	000	000	1.000	1,000	666	666	
### AATER VAPUR 10.00 5.000 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.346 5.991 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.	ERF P	0.050	666.	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1,000	1.000	1,000	6666	1,000	1,000	1.000	1.000	666.	1,000	1.000	666	5660	1.0000	0000	9000	1.000	000	900	1.000	1.000	166*	866.	
### AATER VAPUR 10.00 5.000 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.500 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 1.000 0.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.991 5.346 5.346 5.991 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.346 5.	TMOSP!	0.100	. 998	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666	666	666.	1.000	1.000	666.	666	666	1.000	666	966	1.000	1.000	000	000	000	986	1.000	1.000	166.	\$66.	
### ### ### ### ### ### ### ### ### ##	1.00 A	0.200	766.	1.000	1.000	1.000	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	6660	166.	666 .	666.	1.000	666*	166.	666.	1.000	8666	966 *	6666	1 + 0000	100	000	900	166	666.	666.	.988	166.	
79.00 20.00 10.00 5.000 2.000 1.346 .905 .905 .905 .905 .905 .905 .905 .905	VAPOR	0.500	.991	1.000	1,000	1.000	. 998	166.	1.000	1.000	666"	6660	1.000	6660	866	166.	. 993	166.	166.	666	166"	166.	986	866	6993	* 964	0660	264.	000	466	- 987	.987	166.	166.	.973	. 977	
7346 .697 .634 .912 .935 .913 .913 .913 .913 .913 .913 .913 .913	MATER	1.000	.985	860.	866.	966.	4660	966.	866.	866.	1660	166.	. 998	966.	\$660	.991	* 985	\$660	. 993	. 991	260 .	1960	266 "	960.	196	116	566	046.	070	160.	. 973	. 955	.992	. 993	£ 40 °	.955	
7346 .697 .0834 .446 .446 .446 .446 .446 .446 .446 .4		2.000	196.	266.	166.	.992	596.	.989	166.	.982	. 991.	166.	1661	086 -	. 987	. 991	+96.	6993	.984	. 932	000	4964	. 982	066.	016.	+006	0000	1000	.058	4000	146.	.916	.982	.984	. 893	. 914	
735 (197)  1.346 (197)  1.446 (197)  1.456 (197)  1.457 (197)  1.457 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (197)  1.451 (		5.000	.912	.962	.961	1961	946.	. 955	4965	196	. 459	.960	. 993	,951	. 951	.001	916	046.	1000	.864	100.	,013	050.	106.	7 16 6	1 1 1 1	0000	000	. 891	740.	. 873	.806	. 941	1447	.770	. 896	
2		10.00	.835	. AB7	.890	0 +B+	.861	*A71	* A4.	.891	* A03	*802	.882	.818	.807	* 8 7 11	* BES	.852	.857	. 36	. 853	.800	. 802	* 000	210.		. 677	404	.780	.863	151.	.683	.854	*808	•618	.771	
		20.00	1693	.741	644.	.748	,705	4731	+754	*750	.798	147	,781	.735	,717	,715	* 578	4674	,702	134	. 709	*80B	3 3 7 7	447	640.	1010	740	27.1	.608	.710	.587	, 474	* 698	.705	.431	* 485	
		50.00	.396	* +36	955.	1++*	.539	974.	.450	44.45	450	. 431	U+5×	1241	104.	*411	* 504	.372	. 585	C+0.	.366	127	* 367	1744	0000	107.	014	233	. 506	, 386	.240	*204	.372	カチサ・	.170	*514	
			2480.	2485.	2+90.	2445.	2500.	2505.	2510.	2215.	2550.	2323.	2550 s	25355	2540.	25955	2050.	19907	2560.	2365.	10/02	*6,67	1000		26.06	20300	2605.	2610	2615.	2620.	2025.	2630.	2635.	2640.	50402	2000.	

B-41



	EPROP	.001	000.	.005	600.	000.	0000	.001	0000.	.005	+000.	.023	.052	640.	.003	.001	.003	000.	000.	000.	000.	.001	.031	000.	000.	.026	100.	500.	670.	200.	.001	.036	0000	.002	000.	.001	.008	.008
	α	.8200+00	.1180+01	.9300+00	.7100+00	.1150+01	.1010+01	00+0006.	.10000+01	. 9800+00	.8700+00	.7400+0n	.6600+00	.5700+00	.9300+00	.9500+00	.8800+00	.10000+01	00+0066.	00+0068.	.1020+01	.1010+01	.6800+00	00+00+6.	.1060+01	.6400+00	.7600+00	.7200+00	10.002/	1010101	.8200+0n	.7200+00	00+0026	.8200+00	.8500+00	.8400+00	.8000+00	.8500+00
(PR.CM.)	A	.6118-01	.0978-02	.3866-01	. P437-01	.1059-01	. 2498-01	.4936-01	.2706-01	.4323-01	.0512-01	.1895+30	.4431+00	.1786+00	. 1948-01	. 4818-01	.6279-01	.2853-01	.3146-01	.5053-01	.2218-01	.2850-01	.1238+00	.3336-01	.1981-01	.2000+00	.1158+00	.1471+00	1951+00	. 1363-01	. 8106-01	1919+00	.4676-01	. A449-01	.7691-01	. A243-01	.1460+00	.9585-01
	0.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					1.000				-					٠.	-	1.000	•	***	•	1.000
	0.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	600.	660.	1.000	1.000	ori	erd.	-	-	-		-		-4	-	1.000	-	-	-	***		-	1.000	-4	-	-	1.000
	900.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	066.	d66.	966.	1.000	1.000	1.000	1.000	1.000	~	-	***	***	1.000	•			666.		-	-		-	1.000	•	-	666.	1.000
	0.010	1.000	1.000	1.000	666.	1.000	1.000	1.000	1.000	1.000	. 999	260.	966.	966.	1.000	1.000	1.000	1.000	1.000	1.000	***	a		1.000	*		•	•		-	•	•	-	666.	•	•	•	660.
FSSURE	0.020	666.	1.000	060	060	1.000	1.000	000	1.000	000	666	-6137	.000	x60.	000	066.	066	1.000	1.000	660.	1.000	1.000	066.	000.	1.000	. 997	u66.	. 998	. 997	1.000	060.	166.	666.	066.	. 998	666.	.998	666.
ATMOSPHERF PRESSURE	0.050	856.	1.000	956	700	1.000	000	000	000	000	7997	. 993	196	982	980	566	1000	0000	660.	966.	060.	666.	166.	doo.	666.	366**	960.	560.	365.	666.	166.	. 993	666.	166.	766.	•	.995	166.
TR05PH	0.100	966.	1.000	966	900	. 000	000	900	000	0.04	266.	GAB6.	2 40	396	200	.047	966	afi6.	866°	966.	и66.	466.	5663	766.	666.	. 96.	.989	. 998	.985	866.	166.	1963	166.	166.	166.	166.	066.	. 993
1.00 0TM	0.200	166.	000	100	040	000	000	000	200	000	986	27.0	ACC.	210	100	900	. 992	956	960.	260.	160.	960.	.981	1994	bhb.	190.	626.	. 776	.970	500°	.986	1,20.	160.	.987	.989	•		.986
VAPUP	0.500	975	047	. QH.1	673	600	.00	070	000	0.0	. 905	970		R. A. A.	577	800	070	000	988	.078	066.	0.90	100.	400.	566.	.021	. 94B	. 04.1	120.	.987	900.	.956	\$0b*	906.	.969	996.	845.	306.
LATER	1. Fun	050.	000	0.40	2003			00.0	1000	0.50	0.00	. 075	200	. 777	- Olive	070	5.40	. 978	.075	. 0.57	. 98.0	. 07A	.014	, 96.A	4004	. RDS	*100°	Bon.	. AD *	.972	. 937	. a7A	. 966	. 952	. 31A	.933	bhb.	.030
	2.100 A	400	A LOS	700	Coul.	000	0.00	2000	770	517	Pog.	.774	2 4 4	1,237	510	0 10	410	.954	040.					.010	.965	.733	. H2H	. AD 7	· 75H	.902	47 P.	.774	.030	. 672	* A 3 1	. 973	.610	.807
	Same	TUNK			100	C	C 46.	DE NO.	. 411	- Maria	. 698	0.00	2000	175	0.7.		7115	375	.0164	. H.1.	400	. H75	2744	. neg	.000	. 563	.6.70	46.96	£ 416.	. ASH	.734	.57	147.	404.	.740	.725	.603	•703
	10.07	100		7.00			10.	1111	- 130	. 101.		3.00	37.4	37.	17.5		7 7 7	100	7 14	1113	. 7.44	.750	. U. F.	.7.	.73	3,446.	6609	. tur	. Seed	. 7 LF	Sor.	. 11.	.659	40%.	. 5777	.555	1.62	. 1.1.1
						74.4	600.		3/4.		1004	112.			5 . 1 . 6		* * * * *	11.7.7.	1111	1680	107	4 11 15	2 112	. 775	. 1.10	244	. 524	.773	:16,5	065	. 387	. 104	* FIRS	7.02	47.7.	1347	. 193	.275
								*( ) ) *			1000		2000			1000				11/10		11000	11.11		7		11111			*117			. 11.			1111	. 1758	.371
		-	4000	· ( ) ( )	.000	- TOO!	- , enz	2020.	507.10	· 00/2	6705.		K 1 12.	21011	E ( F ) +			2701	27411	2755	2/6/	2/10/10	27/11	2772	78.1.	2785.	2 Mail.	6793.	2 5000	2000	Visitin.	2015.	2321.		20.50	26.55	C0402	2040.

B-42



The color							MATER	VAPOR	1.00 ATMOSPHERE PRESSURE	HOSPH	ERE PH	F SSUME							
1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0									-	4							U(PR.CM.)		
1971   1970   1975   1970   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975   1975	KE	50.u0														0.001	•	<b>a</b> c	0
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	. (191)	.07%	.280		169.	.860	956	.963	.985	: 993	966"	666.	666.	1,000	1.000	1.000	.9804-01	00+0048	
1972   2874   4944   5623   2879   3042   3947   3949   3949   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000   1000	855.	.109	.358		.723	.861	.921	.988	.983	166.	966"	866"	666	1.000	1.000	1.000	.8290-01	. 84 00+00	į
1977   1974   1975   1974   1975   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974   1974	960.	. 1172	.287	*	.663	.830	.902	746.	976.	.989	h66 "	866°	666.	666	1,000	1.000	1066+90	.8200+00	į
14.7 450 451 452 72. 524 717 414 645 941 971 971 971 100 1.00 1.00 1.00 1.00 1.00 1.00 1.0	465	.057	. 394		.770	.878	.935	906	186.	766	766.	666.	666.	1.000	1.000	1.660	.4162-01	.1080+01	
U.S.   2.18   4.47   6.51   4.44   4.45   9.74   9.94   9.94   9.99   9.99   1.000   1.99\$***********************************	870.	.147	.450		* 822	.929	496	.983	566.	166.	866.	666*	1.000	1,000	1.000	1.000	.4157-01	. 9600+00	
12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5   12.5	875.	.055	.218	•	.631	.808	, A87	.937	.973	.986	166.	166.	666.	666	1.500	1.000	13994-00	.7800+00	.010
UPF         356         514         665         6834         6994         6994         6994         6994         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         1008         100	680.	.029	.169		.528	.717	. A14	.864	546.	.970	. 984	766.	166.	866.	666	1.600	.1952+00	7400+00	. 96
125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125	885.	. U78	.306		.685	. B34	99 a .	\$ 942	476.	.986	166.	166.	666	666	1.000	1.000	10-8066.	8300+00	į
128	.069	5000	.239		.648	.825	006	946.	. 978	.989	966"	986.	666*	666	1.000	1.000	.1123+08	· 8860+00	į
128 181 368 551 734 826 889	495.	.029	.150	•	+995	164	C445 .	166	166.	166.	166	666.	666*	666	6666	1.650	.1697+00	7808+40	į
	.006	.028	.181	•	.551	.734	.826	068*	966.	0.26	,984	666.	166 .	866.	666	1.000	.1683+00	- 7569-400	į
0.07 0.98 0.254 0.199 0.55 0.772 0.854 0.926 0.997 0.995 0.996 0.999 1.000 0.1722-00 0.7950-000 0.002 0.100 0.204 0.299 0.990 1.000 0.1722-00 0.7950-000 0.002 0.100 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.204 0.2	.506	.005	.033	•	. 395	.598	.716	.805	168.	.915	1961	.983	* 992	966"	906	666.	.2484+00	. 7888+80	į
	910.	.007		٠	6£ h+	4689	.772	.85¢	,926	. 95B	.977	166'	566*	866	666	1.000	. 2244+00	7900+BD	Į
. UUG	915.	.022	-		.540	.735	.828	068.	.941	196.	. 982	.992	966"	966"	6666	1.000	.1732+00	. 7900+00	8
. 0.05	920.	.000			1,455	.662	,773	.851	.918	.951	.973	.988	966*	466"	666	6660	.2141+00	04+QOSA.	. 618.3
.005 .063 .163 .337 .540 .665 .767 .855 .905 .907 .998 .997 .998 .997 .998 .998 .999 .884940 .8890440 .890041 .1813 .345 .559 .569 .867 .865 .964 .992 .997 .999 .999 .899 .899 .899 .899 .899	925.	.007			*304	.560	.687	.779	*866	.913	1960	,976	,987	:665	166.	666.	,3601+00	*67 BB+80	
011 114 2845 4559 7569 4647 926 969 997 998 8999 1000 1000 2044 9999 999 999 999 999 9999 9999	930.	.005			+337	0.540	.665	,767	. 855	.905	. 942	.973	.986	.993	166'	866"	.3549+00	08+0869*	. 813
.011 .114 .288 .487 .707 .806 .877 .912 .957 .974 .994 .997 .999 .999 .999 .999 .99	935.	.014			.559	.769	.867	.926	* 969	+98¢	.992	166.	866	666	1.000	1.800	.1476+80	DET-10000	į
	.046	.011			.487	.707.	.808	.877	.912	.957	426.	.988	566.	166.	666.	566.	00+9402	. 7900+00	
	945.	000.			.167	,373	.571	,650	.781	* 85¢	606.	166.	166.	966	666	666.	. 5926+60	*6900+90	
. 0.05 . 0.60 . 172 . 327 . 514 . 662 . 754 . 857 . 911 . 955 . 980 . 989 . 995 . 996 . 8546.00 . 8754.00 . 979 . 999 . 996 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 . 999 .	950.	.000			.156	,363	.518	.647	1777	.868	. 902	.951	. 973	. 986	766	166.	.6451+80	.6700+00	ŗ
.006 .096 .284 .503 .733 .641 .909 .960 .969 .996 .996 .996 .000 1.000 1.000 1.000 .000 .600 .000 .0	955.	*005			.327	.514	.662	,754	*850	.897	. 911	* 965	.980	686.	966.	866.	.3836+00	.6700460	
.001 .024 .092 .215 .426 .577 .700 .818 .877 .919 .956 .976 .994 .997 .5214-00 .7164-09 .999 .999 .999 .999 .999 .999 .999 .	960.	.006			.503	.733	. 841	606*	096*	616.	. 989	966"	, 998	666 *	1,000	1.000	.1783+00	STOREGO	
.000 .014 .076 .207 .432 .586 .707 .870 .876 .917 .956 .975 .986 .994 .997 .5073-00 .71804-80 .001 .001 .001 .011 .012 .210 .357 .500 .656 .917 .965 .997 .999 .996 .998 .995 .903-400 .8700-80 .001 .001 .001 .014 .955 .874 .900 .948 .973 .986 .997 .997 .996 .998 .3138-00 .77804-80 .001 .001 .005 .109 .007 .928 .928 .928 .927 .997 .996 .999 .997 .996 .998 .3138-00 .77804-80 .001 .001 .001 .001 .906 .903 .904 .997 .996 .999 .999 .996 .999 .999 .906 .999 .999	965.	.001	-	-	.215	.426	.577	.700	. 918	+877	.919	. 958	.976	.987	666	666.	.5218+00	00+90-93"	
.001 .001 .001 .001 .001 .001 .000 .357 .850 .660 .753 .827 .901 .941 .966 .998 .996 .998 .910400 .900 .001 .001 .001 .001 .005 .148 .323 .556 .694 .792 .877 .945 .971 .945 .997 .996 .999 .3134-00 .7800-00 .001 .001 .006 .148 .323 .556 .694 .792 .877 .946 .996 .996 .997 .999 .099 .000 .998 .3134-00 .224-00 .8700-00 .001 .001 .001 .002 .294 .997 .999 .997 .999 .997 .999 .999 .9	.076	.000			.207	.432	.586	.707	.870	.876	.917	956*	.975	.986	466.	166.	.5073+00	. T	į
.001 .035 .148 .323 .556 .694 .792 .948 .917 .945 .970 .948 .990 .994 .000 .229++00 .2794+00 .000 .000 .000 .000 .000 .000 .000	.616	.000			.061	.210	.357	.500	099.	,753	.827	106"	1961	.968	.986	\$66.	.1019+01	.6400+80	.017
. UU1 . 046 . 179 . 384 . 545 . 788 . 880 . 948 . 973 . 986 . 997 . 999 . 999 . 1000 . 2294-00 . 5270-00 . 0101 . 019 . 077 . 192 . 385 . 546 . 669 . 8850 . 886 . 986 . 987 . 996 . 999 . 1000 . 1000 . 1224-00 . 6204-00 . 0101 . 019 . 077 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 . 970 .	.086	.001			. 323	.556	.694	.792	.877	.917	5860	.970	. 982	066	966	.998	13138+00	. 7900+00	.013
	9995.	.001			.384	549.	.788	.880	846.	.973	.986	966"	166.	666	666.	1.000	· 2296+00	. 6700+00	.00.
	*0662	.001	.019		.192	.385	.546	.699	.788	.850	.896	046.	496"	.980	. 991	986.	.6129+00	.6200+00	.00
	*666	*006	060.		.431	.637	944.	.824	.890	.92ª	46.	.970	.987	066*	966.	. 998	.2403+00	.7898+00	.020
006 .107 .216 .576 .756 .866 .927 .970 .985 .997 .999 .999 1.000 .1764-00 .8560+00001 .019 .199 .999 1.000 .1764-00 .8560+00001 .019 .199 .999 .999 .997 .5120+00 .6200+00001 .001 .001 .001 .901 .216 .415 .559 .618 .867 .867 .867 .965 .997 .972 .985 .994 .997 .5520+00 .64800+00000 .001 .001 .001 .001 .001	2000	*10.	.167	_	.646	.898	.925	496.	. 987	n66.	166.	666"	1.000	1.000	1,000	1.000	.9264-01	00+0086.	
001 .018 .079 .198 .407 .559 .684 .806 .869 .914 .955 .974 .986 .994 .997 .6136+00 .6200+00001 .018 .021 .991 .216 .415 .558 .678 .742 .857 .905 .905 .972 .985 .994 .997 .5620+00 .6400+00000 .005 .038 .1127 .127 .127 .127 .127 .127 .127 .12	, 50ns	.006		*	.576	.760	.866	* 927	026.	.985	. 993	166"	666.	666	1.000	1.000	1768+00	.8600+00	
000 .021 .091 .216 .415 .558 .676 .742 .857 .905 .950 .972 .985 .994 .997 .5520.00 .6400+00	5010.	.001			.198	104.	.559	+684	.806	.869	* 914	. 955	.974	.986	166.	166.	.6130+00	.6200+00	.015
000 .000 .005 .038 .173 .324 .478 .652 .756 .839 .917 .953 .975 .990 .995 .1127+01 .5700+00 . 000 .000 .002 .017 .107 .215 .386 .578 .700 .800 .896 .942 .966 .947 .993 .1492-01 .6200+00000 .002 .017 .015 .381 .497 .631 .45 .859 .918 .955 .981 .990 .1815-01 .6200+00	5015.	.000		٠	.216	,415	.558	.676	.742	.857	* 905	.950	.972	.985	966	166.	.5620+00	.6400+00	.019
0u0 .000 .002 .017 .107 .215 .386 .578 .7un .8u0 .896 .942 .969 .987 .993 .1492-01 <b>.6200+00</b> 0un .0nn .0u0 .007 .067 .163 .301 .497 .631 .745 .859 .918 .955 .981 .99n .1815+01 .6200+00	5020.	.000			. 938	.173	. 324	.478	.652	.756	*839	.917	.953	.975	066.	566.	.1127+01	.6700+90	600.
000 .000 .000 .007 .067 .163 .301 .497 .631 .745 .859 .918 .955 .981 .990 .1815+01 .6200+00	3025.	000.			.017	.107	.215	.386	.578	.700	.800	.896	346	696"	.987	.993	.1492+01	.6255+00	
	5030.	.000		*	*007	*067	.163	.301	164.	.631	544.	.859	.918	.955	.981	u66"	.1815+01	.6200+00	.01

B-43



	~				•			~	<b>S</b>	-				٠.	-	*	<b>t</b>	0		21	0	0	9.	٥.	_	~	9	x (	5	_	00 1	s .	<b>+</b> 1	0	2	9	2	0
	ERROR	.020		.00	.01	.01	.01	.03	. 065	.00	.07						00.	.01											00.									
	۵	.5900+00	.7700+00	.7800+00	.7200+00	.80000+00	.6600+00	.5600+00	.6800+00	.8300+00	.6600+00	.7200+00	.8100+00	.5300+00	.6000+00	.6200+00	.6100+00	.5800+00	.6100+00	00+0029.	00+0069*	.6200+00	.7100+00	.7600+00	.8300+00	00+0006.	.8400+00	. 7800+00	.7200+00	.6500+00	.6000+00	.6300+00	.7600+00	.7800+00	.6300+00	.7900+00	.6100+00	.6700+00
	- X-	.2388+01	.4747+00	.3817+00	.5719+00	.4163+00	00+0896.	.1289+01	.8015+00	.4403+00	.7516+00	.7839+00	.5484+00	.2367+01	.3274+01	.2532+01	.2354+01	.2450+01	.2183+01	.2585+01	.2026+01	.1668+01	.7369+00	.5639+00	.2678+00	.2043+00	.2588+00	.3723+00	.4750+00	.1392+01	.1758+01	.1624+01	2934+00	.6618+00	.1615+01	.6397+00	.1103+01	. 2348+01
	100.0	986	166.	066.	866.	166.	166°	.987	\$66.	666.	766 .	166.	666.	986.	.982	. 085	186.	.986	.987	.986	.987	.989	866·	866·	066.	1.000	1.000	066.	, 99a	266.	.988	166.	966.	166.	.988	066.	:66.	100.
	0.002 0	972	100	166.	366	166.	.988	470.	.986	166.	.989	.988	166.	.972	196.	.971	476.	.972	.976	.972	.975	.978	966.	160.	866.	1.000	1.000	866.	966.	.985	126.	. 983	. 993	.989	. 977	166.	. 983	060
	0.005	936	986	766	488	.987	.972	546.	696°	:663	416.	.972	₹66.	.936	.918	.933	046.	.935	776.	.934	646.	.952	066.	366.	966.	666.	666.	966*	166.	196.	.950	.960	. 983	.975	846.	. 991	.965	410
	0.010		070	988	970	.976	. 951	.903	946.	.987	.952	846.	986.	.886	4884	.880	1894	,885	006	,884	,897	,918	.980	, 984	. 992	866°	866.	. 992	. 983	346.	.916	.926	696.	940.	606.	986.	.916	aaa
SSURE	0.020 0	000	000	. 977	090	696.	920	840	.915	.977	.916	.910	£ 26.	.810	.761	.800	.824	908.	.812	.807	.831	.868	.963	696.	.985	166.	966.	. 985	696.	₹06.	.866	. R72	846.	.910	.854	976.	.899	976
ATMOSPHERE PRESSURE 300 K	0.050 0	454	100	25.0	010	930	.861	.755	.856	.953	940.	. H37	.939	.661	965.	.658	269.	.662	.700	199.	,711	.770	.918	.930	196.	266.	066.	.965	. 935	. A23	.769	.767	906.	.880	.755	.958	866.	710
MOSPHE K	0.100	003	200	100	010	100	796	199	164.	.925	.779	.766	168.	.517	6447	.525	.561	.525	.572	.536	.596	.666	.862	.880	246.	.983	.980	.938	.893	.732	909.	+09·	.861	.825	.657	.916	.751	200
.00 AT	0.200	370	100	. a77	906	. p. c.	706	555	712	. A79	769.	.681	. 92A	.365	540.	1775.	.415	.377	944.	. 388	:401	.536	.778	. AOA	.902	.965	.959	968.	. 833	.610	. 536	.539	964.	.750	.516	.862	.646	1111
VAPUR 1	0.500	0	1000	1001	000	1000	2001	THR.	. 613	.776	505.	049.	669.	.185	.118	.149	.218	.191	.231	.191	.267	.3.57	.619	. 6.73	429.	010.	. R35	. P05	.720	704.	.354	.346	119.	609.	345.	.737	104.	210
ATER V	0 000.		1611.	+/4.		1000	101	1000	08.3	9779	747	. 4.1.1	000	. DAR	030	C90.	.100	. 086	.111	.077	.136	.191	.467	. 538	.731	.825	.861	+635	.601	940.	.184	.199	. 537	087	. 200	199.	. 122	
ż	2.0001	100		104.	2000	100.	000	1123	0.101	100	707	Hac.	382	.032	700.	.022	620.	450.	. n3b	.018	. 040	.n7E	966.	.375	. 596	.669	249.	.534	Sth.	.112	. 072	· AH.	107.	43.04	489.	.100	.151	
	2 non.		200.	102.	0000	097.		0000		101	108	KOU.	. 1.34	4 U.G	.000	.001	.002	.002	.003	. 660	• 0.03	.010.	.102	. 163	100	.417	x .x .	.276	1200	.010	3000	.011	.150	501.	.012	1001.	. 06.1	
	4 00.0		.00.		. 70.			* 000	0.72	. 0 . 1	0.004	7.70	0.00	DITU.	0.70	. 0.	Ont.	" ALL	.000	.000	.00.	. 110.1	.020	. (14.1	11.1	. 195	1107	. 110 .	THE .	200	.00.	.001	.036	.021	.00.	- W.	-015	1
	0.00		. 000	300.	670.	1000		1000		000	700	1001	.002	000.	000	000	000.	.000	000.	000.	.000	.000	.002	PUU.	000	. D49	.034	.021	0.016	. non	.000	. Aren	F 11 11 .	.001	non.	.001	. 001	
	F. Form		*000	. don	0000	non.		000.			1100	0000	000	0	Bully	0.00	0	000	don't	10	Bud.	unn.	Out.	T. Line		Total.	. 00.1	GHU.	111111	000	Dann.	. 300	.010	W. II.	0.00	D.O.	DIAIL.	
	P. C. S. C.		3035,	30403	3042.	3050.		20000	3000	10000	* 0 7 0 7	* 0000	3000	41196		41.05	811111	4115.	4120.		\$150.	31.01.	31411	114.1.	11.4.1.	3105.	5150.	5165.	5.711.	51775	State.	3111/1.	51.90	51.5	5200	3000	1,110	

5-5

#### UNCLASSIFIED,

#### UNCLASSIFIED



	FRROR	.014	.071	Z.	.030	. 023	240.	160.	010.	.007	6000	.001	.059	600.	*008	.005	.008	.022	. 011	.058	.028	.011	* 032	.024	.012	.003	. 055	.002	.026	*05#	.008	.016	100.	.001	900.	.007	.027	.035
	α	.5600+00	.5600+00	00+0069*	.6700+00	.7700+00	00+0099*	00+0069*	.6700+0n	.6000+00	27400+00	.7860+00	.60000+00	*5800+00	*6300+00	00+00290	*6600+00	*6600+00	*6900+00	.6550+00	00+0069"	.7700+00	.7600+00	.7700+00	.7400+00	.60000+00	.6500+00	.7000+00	.6300+00	00+0029	.7600+00	.7000+00	00+00+90	.7600+00	00+0069	.7100+00	.7100+00	* 7000+00
CAO CA	•	.3443+01	.1981+01	11579+01	00++926	*6933+00	,1515+01	.1266+01	,1308+01	.2364+01	.7542+00	*8225+00	.1869401	,3425401	.2515+01	.1478+01	.1764+01	.1520+01	.1735+01	.2445+01	.1260+01	.9805+00	.1069+01	.1046+01	0046466	.2362+01	11726+01	.1714+01	.1984+01	.1868+01	.1555+01	.:872+01	.2206+01	.1458+01	*1680+01	11576+01	.2191+01	.1608+01
	0.001	096.	016"	266.	\$66.	066.	.986	066.	.988	. 985	1600	866.	.986	5464	.989	1,66"	666.	4660	. 992	+98t	266.	366.	566.	566.	566.	* 983	* 988	.988	476.	. 980	.993	. 985	0,978	166.	.983	066.	. 983	166.
	0.002	. 941	696.	486	.987	966.	476.	.983	776.	. 972	766	. 995	.972	,952	646	. 988	486.	. 987	,985	076.	, 98¢	. 989	166	,991	166	.967	. 977	.97B	450 "	. 963	.987	. 972	.960	.983	696*	.980	.968	.986
		.871	006.	.981	0960	966.	646	986.	949	.915	. 98¢	988	.938	.892	.950	972	.961	079.	1961	.931	. 962	976	.978	.978	.97A	.927	.950	.962	.910	,926	,96R	346	.922	996.	.938	.956	.930	.96₽
	010.	787.	748	979	546.	980	106.	466	.914	.886	.974	.972	.892	.815	906	946.	1927	.943	914	. 881	.934	. 957	096.	. 959	. 954	.876	.917	.922	. 865	.881	345	. 905	.879	446.	906	.925	.886	5000
	0,100 0,050 0,020 0,010 0,005	679	.76E	870	606.	. 97A	.856	. 87a	. 866	.811	. 951	. 95p	. B25	.710	. B35	.903	* A71	.897	. 885	.810	.891	000	.930	. 929	. 919	.80%	*870	.879	. A06.	.868	.902	. 853	*821	.913	.861	.882	. R26	.908
	050.	.511	630	781	A 5.3	846	.764	191	780	.673	906	.913	.705	. 539	1691	. 808	.75A	. 802	.782	.683	.811	. A74	.864	*867	.868	*669	,779	,794	. 701	.727	.820	.755	.709	.857	*776	.800	.718	.833
×	.100	x74	FO.1	246	761	100	.668	705	699	240	. 840	800	510	368	195	707	F#8	704	.673	. 559	.726	812	.788	797.	.802	. 543	049.	.697	. 595	.675	.731	.653	265.	,766	,684	.711	.609	.746
1=300	0.200	170	3000	1000	167n	. F. G.	188	202	. 5.0 X	1001	.777	.777	990	25.3	10 P	582	613	. 58th	147	.419	.6.14	.770	.686	.701	.711	6000	.452	. 566	9940	P. 1. 7. 0	.610	.524	644.	549.	,560	. 591	. 172	.619
	0.500	01.0	2000	000	E 200	643	271	2003	200	2004	6.21	. 6.14	000	130	101	1443	2002	068	3 160	010	.476	ELLE	505	.521	639	.213	7+5.	545.	.277	305	198	. 115	446.	424.	. 452	. 181	.265	.313
	1.000	0.80		0011	On a	000	531	270	1000	004	1007	083	160	0.3.K	070	326	174	0340	141	060	. 570	470	34.74	344	1467	.096	061.	. 183	144	.150	214	.160	1117	235	. 180	. 211	.117	. 210
	2.00/1	0.16		. 000	20 60	100	112	404	1121	0000	200	2000	08.8	1006	000	100	0.64	000	0.00	0.018	11.4.1	101	1 10.7	172	1143	MOU.	.072	.063	.051	.085	610.	.051	. C 314	. 186	* U.6.4	,079	* F 30	420.
	. min 2		111111			* NO.	1 1 1 1 1	1111	4 11 14		3000	0000	200	0000	100	2000	2000	.011	000	- 0003	200	10.61	0.40	0 40	0700	cuu.	700.	. no.	.000	.004	.006	100	. 000	700.	. 006	200.	. nni	7000
	0.1.0						.000	1000	2000	.00.		200	0000	000	000		0000		.000	0000	0110	2000		000	400	n.n.n.	. O. O. O.	unu.	The state of	.0000	Block		. 40.0	0.0	000.	.000	.000	* 000
	10.00				A GEORGE	100	1000		0000	0000	0000	4000	0000	* 000	0000	0000	5000	000	000	0000	000	0000	0000	000	0000	unu	0000	.000	000	000	nun.	. 000			. BEB	0000	Anna.	.000
	0.0			300 ×			1000	1000	1000	* 000.1	1000	.000		0000	* 0.00		000.					000		0.00	0000	0.71	2000		0			0000	0	100	THE PARTY		Dann.	Onn.
	Fitting 5		1661.	\$420 ·	3430.	3430.	2040.	26.40.	* DK 20	.0000	2550.	10000		3000	,0000	1603.		* 0.000				02723		3,630	****	* * * * * * * * * * * * * * * * * * * *	1 54 50	1000	× × × × ×			1000	8 47.	1187	3.585.	3340.	1,194	3400.

## UNCLASSIFIED

#### UNCLASSIFIED



																			,																				
	90997		+000	100.	.003	1000	100.	.025	100.			200.	.00	100	900		000		5000		100.	100		200.	200.		000	.065	.006		010	.016	900	.001	700		400.	400.	010
	a		.6500+00	.6200+00	.6200+00	.6300+00	.6200+00	.5800+00	.6100+00	00+00+9.	.6360+00	.6200+00	.6400+00	.6500+00	.6200+00	- 5800+00	.5600+00	6 300 400	6800400	640040	000000	6300+00	6300+00	000000	00.000	5700+00	5400+00	.5600+00	.6100+00	.5900+00	.5700+00	5400+00	5500+00	. 5800+00	.6100+00	6300+00	.6200+00	.6100+00	.5800+00
	H (PR.CM.		1010101	.2037+01	.2246+01	10+9640.	.2622+01	.2736+01	. 1110+01	.3537+01	.3338+01	.3054+01	.2898+01	.2851+01	.3044+01	.3411+01	.4033401	.5510+01	.6348+01	.5796+01	· SARA+01	.5780+01	.5274+01	.4950+01	1010000	.5094+01	.5678+01	.7016+01	.7560+01	.6901+01	.6859+01	.6939+01	.7825+01	.9285+01	.9687+01	.9601+01	.9899+01	1053+02	1000+02
	0.001	0	101	0/6.	.44	. 976	.073	.970	496.	096.	296.	996.	.971	.973	196.	.958	.952	a 70.	546.	640.	939	.936	770.	.051	300.	456.	010.	906.	.910	. 16.	968.	.877	.86€	.861	.871	.879	. B77	. 854	. 177.
	0.002	071		. 403	505.	. 057	. 953	846.	. 939	. 032	.935	240.	646.	.954	.956	.951	.931	. 911	906.	506.	864.	. 896	806.	.016	100.	.880	. A60	. 845	.852	. P57	. P34	.807	.790	.782	164.	. A10	.792	.762	.725
	7.005	940			. 321	.916	.910	206.	*888	.877	.881	.891	506.	.912	.895	.873	.861	.851	.835	.821	.813	.812	.82R	.840	.822	.792	.755	.727	.730	.751	.710	.680	.656	.645	299.	.680	.668	.65₽	.648
	0.010	110		1600		.871	.862	.851	. A31	.816	. A21	.834	.853	.862	.839	. P.05	.769	.739	.729	.727	.720	.719	.741	.756	.730	069.	149.	.611	.628	1949.	109.	.560	.530	.519	.556	.589	.568	. 523	.459
FSSURE	0.020	. 865		0.0	511.	.807	. 793	.770	194.	.750	.750	.756	.77B	.789	.758	.712	799.	.620	909.	+604	. 59a	*600	.626	144.	.615	. 568	.5.14	7470	264.	114.	5000	5/4.	.421	/ B	.398	.424	.411	.379	.321
FRE PR	0.050	.785	733	603	200.	1000	. 543	. 544	. 60A	. 577	.587	.611	.639	099.	.610	. 540	.483	.428	.411	.410	506	604.	177.	.463	434	.386	.326	.280	166.	. DIR	187.		.214	961.	.211	.228	.214	.188	.150
1.00 ATMOSPHERE PRESSURE T=300 K	0.200 0.100	.671	1630	526	0000	. 501	6000	10.	11.	.401	# t0 9	1 4.	. 502	. 21.	0/4.	.403	.332	.272	+256	*256	.525	.256	.287	.300	.286	· 244	.192	.150	.150	oct.		001.	.103	.000	960.	907.	560.	. 0.5	400
1.00 AT		.536	. 47A	77.0	1000	005.	000.	100.	. 510	12.	150.	2200	100.	200.	126.	. 25F	. 191	.136	.122	.124	.121	.125	. 142	.167	+157	.132	250.	. 00H						000		200	170.	. 100	
/AP0P	005.0	.297	. 26A	. 253	000	0111	201.	100	. 104	001.	111.	1 . 7 .	007.		7.7.	201.	. 862	. 1129	.022	470.		5050	to (1) •	2+1+	+ .	.034	1000	1000	010		8	0.00	000		2000	2000	2000		
MATLA	1.900	.166	.131	. 103	F 19 61 4	070	9 .	000.	****	001.	000			1000		100	1700	5	* 002	5000		500.	000.	200.	101	* 006			.00.		.001	.0203	0.10	0.0	2000	000		000	
	2.000	.05H	· + U ·	.031	.022	. OIR	0.15	Dir.	000	9000	400			000	400	100	100	1000		000	0.00					100.	- Charle	000	mun.	P.C.O.	.000	. nin	000	. Chill	The Land	BALM.	DOU.	66.7	
	5,000	*00*	*004	. 902	.001	.001	. 001	100.	.000	000-	.086	.000	. 11.11.11	.000	0000	0110	000	0000		0000	970	0.10	000			2000	. Thurth	.000	ndn.	0000	6000	000-	000.	.000	UHU.	.000	THE .	י מחע	
	10.09	"DOL	0000	. Bur	". Thun	. 00.0	0.0	. nan	. ner	. B. D	. 000	0 11.	2000	WILL.		1	0 10		0.00		0.70	u i i					. God	176.	"Dille	n n n .	6000	- GOF	* U.C.	0000	0.11.	. Dan	.000	1711.	
	00.00	0007°	* 0000	* A D P B	000.	. 1.00	.000	. 000	ann.		.000	. One	.000	* 0.00	. Dr. n	L C D D			. Crear	BOB.	. nnn	. Unn	Dog.	0000	0000		.000	OUTU.	.000	11/11	· LPI	W.F. III	. fr/1 n	DUI.	01.	IJU IJ.	1000	· ULU	
	301.	Tub.	1.77.4	*000	11/11/11	. Bun		* 111.11	. 144	S. Link	-000	2000	DEF.	140/0.	Jones.		AUG.	DI TOTAL	W. K. K.	. 19.0	. 11.27	- Heart	The state of		W 12.	unit.	J. T.	TOU.	0 10 *	O TONA	n 1717	11 100	* 1. J. J. J.	MODE			* 0.00	WALL.	
	FIRE	5+0.5*	2+11.	5417.	542	3425.	5+311.	5+5.	3440	3440.	3950.	3455.	34601	541111.	3471.	347	3440.	3481	3441.	3495.	35000	35015.	55.11.	5.115.	31,211.	308.	3331.	35.55.	3541.	5297.	5000.	3555.	Spel.	5565.	5571.	5575.	3560.	Sacs.	

#### UNCLASSIFIED



			***		***		***																						:				*					
	ERROR	.047	. 206	.001	.004	. 018	. 017	. 015	30.	.032	.114	.250	040.	.028	.016	.033	.002	.007	. 156	.016	.000	.003	.002	.082	. 001	7	2	900	.014	. 906	.001	.000	. 015	.182	.078	.118	.023	.002
	æ	.5900+00	.6700+00	.5500+00	. 4600+00	.4000+00	.3860+00		5400+00	5300+00	. S300+00	.5700+00	.6100+00	.6100+00	.5900+00	.6200+00	*6100+00	.6400+00	.7306+96	.6300+00	.5900+00	.5800+00	*5700+00	.5800+00	.5900+00	.5700+00	.6000+00	*6300+00	.5800+00	.5700+00	.5080+00	00+00*5	00+00##·	. 4700+00	00+00## ·	.5700+00	.6300+00	.7000+00
( pp CM.)	<	.1272+02	.1688+02	.1101+02	7463+01	. \$666401	.5332+01	5666401	1040067	.6862+01	.7914+01	.1115+02	.1234+02	.1188+02	.1283+02	.1663+02	.1521+02	.1542+02	.2075+02	.1599+02	.1519+02	.1576+02	-1527+02	.1569+02	.1707+82	,1746+02	.2189+02	.2911+02	*2857+02	. 3415+02	.3153+02	.2968+02	.3114+02	.2770+02	1489+02	.1699+02	.1590+02	.1577+02
	0.001	.702	.741	723	.749	.700	. 683	700	796	608.55	.866	.825	.826	.828	.793	.771	.820	· 877	.895	+ 884	+817	.750	147.	.759	.759	.751	.737	.701	.623	.515	.360	.233	.212	.268	.419	.601	.763	*886
	0.002	695	1697	696	648	.600	583	600	698	.785	.780	.752	755	,753	.713	,678	669	.725	,714	269.	9994	645	9490	*650	1653	.633	,552	. 461	.416	.365	.251	,153	.134	.185	, 339	. 526	.691	.817
	500*0	.63A	592	540	2 2	500	488	200	. 601	969.	688	.650	.632	.608	,554	.512	,539	,574	.563	.536	. 501	472	, 471	* 47E	.467	944.	# 40B	.352	. 569	.183	.107	.05A	.053	.101	.234	.397	,550	,674
	0.010	404	100	1111	77.	0000	200	000	2000	545	540	.514	. 50A	164.	.423	.367	.396	.435	. 424	.397	.362	. 331	.330	. 333	.319	.294	.252	.201	.141	* 084	.042	,019	.016	640.	.150	.27B	# 40B	. 522
	0.020	.270	26.7	000	.00	100	2000	200	350	. 41.4	404	375	.367	348	.281	.225	8400	.283	.275	.252	.223	.197	.195	.196	.181	.159	.124	.087	.054	.027	.012	.005	001	.015	.077	.161	.257	.350
	0.050	1117	100		071.	200	200	2000	227	254	177	101	128	.164	.124	.079	.089	.107	.102	160.	. 077	.065	* 065	39U*	, n55	.041	.027	* 014	900.	.002	.000	.000	003	.001	.021	.052	\$60.	.143
×	0.100	100	0 40		. 040		001.	1400		1115	1077	030	090.	.048	.035	.021	520	.029	+027	.024	.020	.016	.016	.016	.012	* 00B	,004	.001	000*	.000 ·	000	.000	001	*000	+00°	.012	.026	740.
7=30	0.200	700	200	0000	1000	0000	0000	1000	0000	050	000	.014	110.	.012	, no7	. no.	. 900	. 008	*003	.003	.003	. 105	. 401	.000	. 900	1001	.001	.000	non	. 90n	.000	*000	000	.000	*000	.001	.003	400,
	0.500	000	0000	0000	0000	0000	0000	000.	0000	0000	000	0000	000	000	000.	.000	000	000	000.	000.	.000	000.	*000	0000	000.	.000	0000	000*	000*	0n0 ·	0000	0000	.000	000.	.000	000.	000.	000
	1.000	000	0000	1000	.000	0000	* 000	10011	0000	000	0000	000	000	0000	.080	.000	000	. 480	000.	000	ngu.	000	ORU.	.000		ugu.	.000	.000	, non	.000	.000	000*	.000	.000	.000	.000	000	000
	2.000	0.00		.00.	000.	. 600	1000	100.	.00.	000		000	000	000	.000	.000	.000	1000	. ngn	.000	.000	.000	.000	.000	.000	00u*	"00"	.000	.000	.000	0000	.000	.000	.800	.000	.00n	000.	.000
	5.003		0000		. 000	.000	.000	. 100	000.	000	0000	000	000	0000	.000	. 400	0.00	.000	.000	- nnn	. non	, nna	*00u*	.000	.000	1000	.000	4000 ×	,000	*000	uuu.	.090	.000	.000	.000	.000	.000	. 000
	10.07			.000	*00°	.00.	.000	.00.	.00.	.000		0000		000	0000		2000	. 010	.000	000	000	D. D. D.		. nun	Onu.	. 96.0	.000	000 ·	"UBU	.000	0000	.000	000	.000	.000	.000	non.	.000
	20.00				.000	.000	* 908	0000	*010	000	0000	000		0000	000	000	000	.000	UUU.	. 000	. 000	000	,000	UND.	.000	.000	.000	.000	. 999	.000	.000	.000	.000	.000	.000	.000	.000	non.
	50.30		* 1707		. 0.11	1000	. Dall	.000	. 000	. 000			0000	0000		000	000	000	000	0000	0000	01.10	0000	67.17	Gillio	U III V	.00m	000.	000		- Bill		OND.	Dan.	. 30M	.000	n. D. A	C. Day
	FAFE.		32941.	3247.	3000.	3005.	5010.	3615.	3620.	3023.	2020.	2002.	2040.	30+3.	40.55	Anho.	*	\$670.	35.75		ANKS.	Te tan	3095	4700	37115	4710	3715	3720.	\$725	3730.	1715	37411.	3745.	3750.	3755.	3760+	3765.	5770.



				:																																		
	FRROR	.001	.003	.004	900.	.007	.033	.001	.054	.006	.140	.087	.036	.003	.003	.003	.001	.003	.016	.012	.045	.092	.067	.031	.047	.014	.003	.030	.008	.026	.001	.051	.011	.001	000.	.001	.001	
	а.	.7200+00	.7300+00	.7200+00	.7000+00	.6800+00	.7400+00	.6300+00	.6800+00	.6100+00	.6500+00	.6100+00	.5800+00	.5900+00	00+0009.	.5400+00	.5700+00	.5900+00	.5800+00	.5900+00	.5900+00	.6600+00	.6200+00	00+00+9.	.6700+00	·6000+00	.6400+00	.6600+00	.7100+00	.7500+00	.7300+00	.8000+00	.8600+00	.8100+00	.8900+00	.9200+00	.9500+00	00.000
	UIPR.CM.	.1442+02	.1332+02	.1222+02	.1118+02	.1035+02	.1147+02	.1071+02	.1716+02	.1657+02	1929+02	*1865+02	-1775+02	.1788+02	.1808+02	.1317+02	.1176+02	.1042+02	.7851+01	.7909+01	.6825+01	.6803+01	.4434+01	.3950+01	.3857+01	10+6+62.	.2219+01	.1703+01	.1402+01	1097+01	.9501+00	.6219+00	.4710+00	.4520+00	.3136+00	.2425+00	1999+00	1802+00
	0.001	.914	506.	.903	668.	968.	764·	· 873	· P02	.750	C41.	.737	.733	.726	1744	.754	964.	.846	.862	.872	.877	868.	.927	£ 46.	. 955	. 959	. 982	.986	266.	166.	100.	860.	000.	060.	1.000	1.000	1.000	1.000
	0.002	•	•	•	•	•	.847	.810	.719	* 665	.643	+633	.627	.619	.639	.651	904.	.772	.795	.808	.816	+ B44	.886	.913	,924	.930	196.	170.	180.	066.	560.	966.	866.	666.	1.000	1.000	1.000	1.000
	0.005	.725	.742	.748	.745	.742	747.	.689	.672	.505	94.4	. 450	.451	£ ## .	194.	.482	.554	.639	•676	069.	.704	.746	.807	.846	.861	.870	.920	646.	. 960	.975	.987	166.	966.	166.	0000.	066.	1.000	1.000
tvI.	0.010	.586	.620	.632	.632	.630	.637	.561	.432	.362	.334	.413	106.	.299	.316	.339	.420	.509	.560	.575	. 595	649.	.725	.774	164.	.807	. 884	. 905	110.	. 955	. 975	. 982	266.	. 993	166.	660.	060.	0000
ATMOSPHERE PRESSURE	0.020	.420	.467	. 471	.465	.467	\$64.	407	.280	.219	•		.168	.167	.177	.204	.281	.361	.427	.441	694.	.532	.623	.681	.704	.725	.821	.851	506.	.925	.954	190.	. 985	. 987	n66.	166.	goo.	000
FRE P	0.050	.189	.228	.249	.261	.269	.276	.198	.108	.073	690.	.048	.045	. 04B	.051	.073	.121	.171	144.	.255	162.	.358	. 459	.523	.550	.585	. 701	947.	CZ8*	.857	.901	. 928	. 063	. 968	. 985	266.	. 005	366.
TMOSPH	0.100	.065	.086	.101	.112	.121	.127	.081	.032	.017	.017	.000	.009	.010	.011	.022	.043	.069	.131	.134	.171	.222	.322	.383	.410	.457	.561	.641	+107.	.770	. 83	.876	.920	.030	.970	196.	. oc.	100.
1.00 A	0.200	.011	.016	.021	.026	.030	+034	.020	.003	.002	.001	.001	.001	.001	.001	+000.	60U*		.050		. 17A	.104	.188	.240	.263	.320	.458	515	14.	.674	.736	466.	. 968	* 98t	. 735	.959	. 071	915.
VAPUR	0.850	.000	.000	0000-	• 000	.000	.001	.001	.000	.000	.000	.000	.000	.000	.000	0000.	.000	.001	.005	• 00 5	.012	.016	.050	.005	160.	.148	.236	.3/5	6777	604.	.555	9.94	.756	.702	77.00	. AOB	710.	970.
"ATEL	1.000	.000	. 000	.000	.000	.000	.000	.000	.000	.000	• 000	unu.	000*	.000	.000	* 000	.000	.000	.000	.000	.001	.001	.014	.021	.024	950.	.107	. 16.3	100.	177.	99.	* 0.46	1163.	. 526	47.	1740	. n Z P	360.
	2.000	.000	. 001	.000	.000	.000	.000	. AUT	.001	.000.	.004	1000	.000	* UD/	* U DE	.000	.000	.000	.000	.001	.000	.000	.001	200.	200.			.07	105.	101.	177.	. 21	105.	0.7.	1000	.13/	. 200	
	5,400	* 000	.000	* 000	.000	. 000	.000	*000	* 000	.000	. 000	.000	.000	. 1100	.000	. 000	.000	100.	.000	.000	.000	. 000	.000	360		300.		100.	2711.		1 1111	101.		11.11	192.			· (1.7 F
	16.07	0.00	*000	.000	* 00h	.000	* 900	.000	* NID	* 000	.000	.000	.00.		.0163	* HDD	.000	600.	.000	. 900	. 36.	• 080	.000	. 900			* 11.01					. 040		.024				
	20.00	600.	* 000	0.000	* Un0	* 000	000.	*000	* 000	. 000	. 0011	.000	*	100.	. 11011	. 0000	. (100		000.		.000	. 600	.000	000.	11111	1000	0000	1000	0000	000		1000	2	0	.011	277		
	S6.403	* 300	1000	.000	4.01.0	9000	.000	,000	6000	0000	0700		.00.	unn.		0700	1000		.000				Gon.	000.	0000													
	FIRE LA	37173.	2700.	2785.	37911.	\$795.	5300.	30111	3320.	3030.	.0400	00001	2000	.0200	2000.	3390.	3900.	5910.	3350.	.0000	. 0170	2320.	3360.	53/0.	.0000.	2990.	.000	4050	40.50									



	ERROR	.003	.005	.001	.001	.001	.001	.001	.001	.002	.001	.001	.001	.001	.001	.001	.001	. 015	80.	.001	900.	. 569	*00.	000.	000.	000.	.001	000.	000.	000.	000.	000.	000.	000.	000.	.000	.001
	α	00+0096	00+0016	.1000+01	.1030+01	.1020+01	.1020+01	.1020+01	.1020+01	.1020+01	,1030+01	.1030+01	.1030+01	,1030+01	.1030+01	.1040+01	.1030+01	.1100+01	.1050+01	*10404010	.1040+01	.1050+01	.1070+01	.1050+01	.1050+01	.1050+01	.1050+01	.1040401	.1040401,	.1030+01	.10000+01	.9800+00	.9660+00	.9300+00	.9100+00	.8700+00	.8400+00
	U(PR.CM.)	.1618+00	.1401+00	.1163+00	.9826-01	.9460-01	.8715-01	. A189-01	.7776-01	.7335-01	.6718-01	.6431-01	.6128-01	.5816-01	.5517-01	.5098-01	.5065-01	.3728-01	.4357-01	.4281-01	.4118-01	.3609-01	.3395-01	.3547-01	. 3423-01	.3348-01	.3276-01	.3341-01	.3298-01	.3405-01	.3896-01	.4179-01	.4515-01	.5266-01	.5847-01	.7186-01	. A784-01
	100.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.009	1.000	1.000
	0.002	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1,000
	500.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	066
	0.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	666	666*	666.
Bunssad	0.020	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1,000	1.000	1.000	666.	666.	866.	. 998
EKT DE	0.050	766.	866	666*	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1,000	1.000	1,000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	606 .	066.	666.	866.	166.	\$66.	n66.
TMOSPH TMOSPH	0.100	166.	\$660	966.	166.	a66.	866.	866	866	866.	866°	. 998	566.	6660	666	666	6660	066.	1.000	1.000	00001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	066	066	666	866.	166"	966	766.	. 991	.984
1.00 ATMOSPHERE T=300 K	0.200	. 981	.987	U60*	660 *	266.	#66·	566.	966.	3660	366.	966*	966 *	966.	966.	166.	1660	760.	166.	866°	866.	860 .	* 998	866.	866.	499B	466	4998	666.	166.	966"	966.	. 993	166.	.988	.982	. 977
	003.0	, 939	.953	656	400 *	1961	.971	. 973	.975	. 977	626	.981	.982	\$ 985	986*	.987	.938	.988	. 988	066*	166.	266*	266*	. 992	. 993	. 993	.993	266.	. 992	166.	, 988	. 986	.983	. 977	.971	4959	* 948
*ATER VAPOR	1.000	. 866	064.	500°	,914	.020	.927	.932	.936	.961	\$40.	640.	.953	1957	096.	* 962	. 963	4965	196.	6900	.971	.973	* 974	.976	,977	.977	.97B	.978	.978	* 977	176.	696"	e 963	* 953	1110.	.926	6000
	2.000	744.	.70.	.807	* 82h	. 9.511	.851	.8011	.867	. 975	.882	.887	.892	.894	+06.	* 90B	.912	.916	.920	56°	.921	.931	* 934	.936	,939	. 941	246.	246.	246.	. 941	,932	.92H	.920	406.	. A93	*864	* 844
		474.	.525	*563	965.	.618	549.	* 659	.673	*689	+04.	.716	.729	.743	*755	*765	+77.	.787	.793	*805	* 809	* A17	* A74	.831	*838	. 841	サカビ。	* 845	* 844	. 841	*825	· 820	.811	.789	,773	.741	* 705
	10.00 5.000	.25.	.271	.311	5 + 6 *	1777	. HC3	£ 25.	cht.	+1125.	787.	* 50n	.517	. 537	.5594	.569	* 50d?	*664	*610	1959.	.634	* 65P	,661	.671	.680	499.	169.	:693	1669	069.	.672	.667	1994	.636	.619	.585	* 544
	20.00	.055	470.	.096	.116	*134	*150	.173	.189	*20B	.227	*545	*259	.279	162.	.313	.328	* 343	.360	* 378	. 394	605*	.423	.435	8448	.455	.461	.467	0/4.	0410	954.	1000	644.	.457	.411	.382	. 343
	53.00	.dul.	5000	.003	*00°	900*	* 000 a	. 012	* 015	*018	*043	17000	.032	.038	540*	.051	* U58	* 004	.671	.000	060*	660.	* 108	.116	*165	.101	.137	*1+5	.140	. 148	.1+3	. 145	*1+5	.135	.168	.115	\$60.
	FAEG.	4120.	4130.	+140.	+150.	4160.	4170.	*TODT+	4190.	+200.	4210.	*550.	4230.	4240.	4751.	4260.	4270.	4580*	*0624	+300.	4310.	436.00	4330.	4.540.	4350.	4360.	4370.	4380.	4240.	***	4010	4.50.	+430.	*0555	+020+	+00++	*17.44



	ERROR	.001	.001	.002	.002	.002	+00.	+00.	.003	<b>+00</b>	+00·	.003	.011	.003	.047	.036	.017	.025	.008	000.	.001	.020	.015	.000	.001	.003	.011	.014	.020	.001	.001	.003	+00.	.017	.017	.017	.012	.001
	α	.A0000+0n	.8000+00	.7500+00	.7100+00	.7200+00	.7200+00	.7100+00	.7300+00	.7700+00	.7300+00	.7500+00	.7700+00	.7900+00	.5600+00	.F.200+0n	.5900+00	.6200+0n	.6100+0n	. AG00+00	.9200+00	.6500+00	.6300+00	.78n0+0n	.7400+00	.6800+00	.6700+00	.5800+0n	.6100+00	. A0000+00	.7900+0n	.6600+00	.7100+00	.7500+00	.5900+00	.6100+00	.69n0+nn	.7500+0n
3000	A	.1123+00	.1074+00	.1442+00	.1938+00	.1963+00	.2327+00	.2261+00	.1566+00	.1269+00	.1519+00	.1186+00	.1101+00	.1272+00	.1538+00	.6022+00	.3675+00	.2895+00	.2399+00	.5418-01	.4620-01	.1804+00	.1897+00	.0556-01	.1189+00	.1218+00	.1656+00	.3322+00	.2767+00	.9592-01	.9352-01	.1987+00	.1820+00	.1436+00	. 1296+00	. 4655+00	.2314+00	.1256+00
	100.0	1.000	1.000	1.000	066.	666.	666.	660.	000.	1.000	1.000	1.000	1.000	1.000	066.	666.	060.	6000.	060.	1.000	1.000	060.	660.	1.000	1.000	1.000	060.	0000.	000.	1.000	1.000	0000.	000.	1.000	000.	000.	.000	1.000
	200.0	1.000	1.000	666.	660.	666.	660.	866.	666.	660.	666.	660.	1.000	666.	100.	966.	866.	860.	666.	1.000	1.000	866.	860.	1.000	1.000	660.	860.	166.	866.	1.000	1.000	860.	860.	660.	866.	166.	. 09B	660.
	900.0	066.	066.	466.	966.	166.	766.	966.	266.	466·	466.	466.	666.	d66.	166.	166.	766.	966.	966.	1.000	066.	766.	966.	066.	066.	066.	360.	166.	966.	066.	066.	966.	966.	999.	766.	166.	960.	900.
	0.010	866.	866·	100.	366.	966.	.993	166.	966.	966.	966.	966.	.998	166.	.981	.983	. 989	166.	266.	060.	666.	260.	266.	906.	166.	. 99A	266.	.986	.988	866.	166.	665	.003	966.	. 988	.981	600.	900.
FSSIJAE	0.020	966.	960.	100.	166.	060.	.987	.986	. 980	660.	.991	666.	966.	£66.	.974	.967	97P.	FAP.	. 989	060.	166.	. 986	180.	160.	960.	500.	. 985	.073	970.	960.	.005	980.	986.	160.	.077	.075	. 946	Lec.
1111	050.0	. 991	686.	, 984	.978	946.	. 971	696.	.976	.982	.980	. 983	.989	. 985	140.	.024	.951	.961	996.	A60.	766.	.965	195.	300.	.987	ago.	195.	140.	.951	J66.	980.	.970	.971	.991	.950	940.	330.	.981
THOSPH O K	0.100	.982	006.	.971	.960	.95A	8 94 B	C+6.	006.	.960	406.	.971	.981	.972	.890	. A67	. 914	.931	040.	A00.	.96ª	040.	. 930	596.	.976	010.	5 400	006.	. 91 p	685.	.970	1 70.	. 66.	. 96.	. 161	400.	. 50.	605.
1.70 A T=30	002.0	496.	496.	Att.	. 932	.930	.015	.915	.937	646.	1 40 .	. 953	. 366	.952	. 935	.785	080.	. 988	200.	066.	186.	506.	.902	.072	. 95A	240.	.915	. 45n	cln.	. 96A	, 264	. 923	.026	040.	. 465	040.	.306.	650.
andw)	01.5.0	676.	426.	.901	. 973	. 172	744.	0 10.	. A 3 9	900.	. A 43	.015	450.	.910	.736	049.	.757	708.	. R 29	470.	500.	54.8	A.4A.	.941	. 91A	. 0ZB	. PC2	.701	.792	400.	500.	.867	. 072	000.	.773	.748	. 17	91.5.
. W. T	Lunu.	4000	. Ade	044.	871	. TUB	.774	. 77 A.	. Cc.	36.6.	46.94	. 471	76,00	- ne	0 to to 10	. 117	95y.	.727	71,7	040.	3,117.	r 1/1/2.	302.	F00.	670.	0 . 1 .	11.	1000	.710	36,40	764.	1971.	.010	. 754	. ( (. )	061.	0.	., 06,6.
		.313	.111	.77.	.715	17.	P. 6.15.13	· 6.76	.75.	. 784	.700	. AU.	. 635	.768	46.5.	. 734	244	·624	. 004.	+00.	.Tu.		.71.		. F. U.F.	6.3.	247.	. E. I(P)		+5.1.	. (00)	.75.	.74.	.707	4.5.1F		.+ 71	
	'aba	1000	. 7.1	.4411	1.1.1.	45,34	2711.	7811.	£ 57.53 .	46.54	. fs )r.	.60M	669.	.6.31	0.16	175.	. 274,	A 14.91 F.	. 1.17	*700	.41.15	A 57. 34.	4.5.36	*713	.4.70	.77.	1194	11.11	* 11.7 F	104.	.715	27.5	554.	1000	. L. 1 .	. 171	1001	
			. 117.	£ 75.	. 372.	1,11,7			. 4. 4.	. 1.1.1.	P. 44.	1 26 4	£ 414 .		. 30	.120	1,56.		. 765		- un.			. 16.			* 14.7°	* 214				17.1.	. 1000	. 171.				, ,,
		1		1000	Duc.	* 1 0 00	0.170	. 15.	24,49	1.00.	F-17.43	4 3 755	. 344	900	171.	630.	.120	.146	6. 2.	* 17 %	* IT P	× 17 *	. 11.4	* 174	1.5.	. 174	5.00	* 1%0	.103	202.	* 174		400		. 11.7	.11.5	10 L	
			1			* ***	**				1,11.		. 1. 6.	* 101 0	4.05 to	277.	4. Uch			. 1 /	* * *			***	1	* * / / *	. 4.1.0	17700				. / / .						
	1907	44774		4.11.	1000	+ 500+	* 1.4.1.4	40000	* 111111	40700	* 11/10 %	*107.	*1000th	*01 ·	404 H.	40311	* * * *	*1.70%	905.11×	40704	9.0°	+ 1,794	. 11	4.11.4	41776	4777	+ 1914	A 12 1 A	* 1111	. 11 1 .		* 1.18		Sul	+ 1114	* 1000 mg		



2.001 1.600 0.201 0.101 0.050 0.020 0.020 0.101 0.050 0.020 0.020 0.101 0.050 0.020 0.020 0.101 0.050 0.020 0.020 0.101 0.050 0.020 0.101 0.050 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020	.002
10.06 5.000 2.000 1.600 0.200 0.200 0.100 0.050 0.020 0.010 0.005 0.002 0.001 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	.5800+00
10.00 5.000 2.000 1.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	.3433+01
10.16 5.000 2.060 1.660 6.500 8.500 0.050 0.020 0.010 0.005 0.052 713 .846 .304 .940 .945 .941 .999 .993 .997 .999 1.998 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .997 .999 .999 .997 .999 .997 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999 .999	4000
10.00 5.000 2.000 1.600 6.500 0.200 0.100 0.050 0.001 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	.924
10.00 5.000 2.000 1.600 0.200 0.200 0.100 0.050 0.020 0.020 0.100 0.020 0.100 0.050 0.020 0.020 0.100 0.050 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020	.863
10.40 5.000 2.000 1.600 6.500 0.200 0.100 0.050 0  -5.52 .713 .846 .004 .040 .069 .061 .089 -4.10 .576 .713 .846 .004 .040 .069 .061 .089 -4.11 .576 .711 .007 .878 .020 .974 .068 -4.11 .576 .711 .007 .878 .020 .954 .971 -4.11 .576 .711 .007 .878 .020 .954 .971 -4.11 .576 .711 .006 .873 .034 .942 .068 -4.12 .535 .711 .006 .873 .034 .961 .971 -4.13 .556 .711 .006 .873 .036 .974 -4.14 .576 .714 .000 .877 .034 .961 .971 -4.15 .536 .716 .000 .877 .034 .961 .971 -4.16 .530 .716 .000 .873 .036 .971 -4.17 .576 .778 .858 .951 .961 .972 -4.18 .576 .571 .674 .867 .923 .935 -4.18 .586 .972 .845 .973 .945 -4.19 .586 .972 .974 .903 .945 -4.10 .772 .778 .778 .884 .993 .945 -4.10 .772 .778 .778 .884 .993 .945 -4.10 .772 .778 .778 .884 .993 .945 -4.10 .772 .778 .778 .778 .886 .993 -4.10 .772 .778 .778 .886 .993 .945 -4.17 .786 .787 .943 .945 -4.17 .786 .787 .784 .887 .993 -4.18 .786 .787 .784 .887 .993 -4.18 .786 .787 .784 .887 .993 -4.18 .786 .787 .784 .887 .993 -4.18 .786 .787 .784 .887 .993 -4.18 .787 .787 .784 .887 .993 -4.18 .787 .787 .784 .887 .993 -4.18 .787 .787 .784 .887 .993 -4.18 .787 .787 .784 .887 .993 -4.18 .787 .787 .784 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .884 .887 .993 -4.18 .787 .787 .787 .787 .884 .887 .993 -4.18 .788 .789 .884 .887 .993 -4.18 .788 .789 .884 .887 .993 -4.18 .788 .789 .884 .887 .993 -4.18 .788 .789 .884 .887 .993 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .480 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18 .788 .789 -4.18 .788 .789 -4.18 .788 .789 .893 -4.18 .788 .789 .893 -4.18	.796
10.00 5.000 2.000 1.000 6.500 1.000 5.000 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500	.706
10.00 5.000 2.000 1.000 6.500 1.000 5.000 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500	. 474
10.00 5.000 2.000 1.000 6.500 1.000 5.000 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 1.000 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500 6.500	.324 .324
10.00 5.000 2.000 1.000 0.500 1.000 0.500 1.000 0.500 1.000 0.500 1.000 0.500 1.000 0.500 1.000 0.500 1.000 0.500 1.000 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500 0.500	.190
10.40 5.00 2.00 1.60 4.45 4.45 4.45 4.45 4.45 4.45 4.45 4.4	.099
. 55.2 . 713	.016
10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10	.005
5.5.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	0000.
2. 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	0.00
- x 202222222222222222222222222222222222	0000.
0	000.
### ##################################	5200. 5220.



	FRROR	.024	.073	690.	+00.	.060	900.	.100	.036	.052	940.	600.	.019	.015	.058	.014	600.	.012	.048	.001	.001	.002	.008	+000	.021	.010	.072	.008	.013	.026	.063	640.	.082	.035	.018	.083	.026	.017	
	α	.6200+00	.6300+00	.6700+00	.6100+00	.6600+00	.6100+00	.7200+00	.7500+00	.6100+00	.60000+00	00+0044.	00+0064.	00+0064.	.6300+00	.6100+00	.6200+00	.7100+00	00+0049.	.5600+00	.6000+00	.5600+00	.5700+00	00+0049.	.6000+00	.5200+00	.5700+00	.6700+00	.6300+00	.5800+00	.5700+00	00+0029.	.6600+00	00+0009.	.5600+00	00+0049.	.6500+00	1.5900+00	
80	A	.4000+01	.4394+01	.4281+01	.4512+01	.4304+01	10+0707.	.2144+01	2052+01	.3373+01	.5731+01	. 8363+01	.1150+02	. 6866+01	.5443+01	.4738+01	.4486+01	.3781+01	.3942+01	.3355+01	.2723+01	.2857+01	.3467+01	.2464+01	.2612+01	.4023+01	.2285+01	.1641+01	.1785+01	.2420+01	.1837+01	.1463+01	.1488+01	.1720+01	.1152+01	.7618+00	.6630+00	.7345+00	
	0.001	5 46.	950	.938	600	100	190	946	080							. 633			030		950.						446.						. 985	•	066.	·		•	
	0.002	806		. 903			•	970	•		. A16																										966.		
	0.005	•	•	•		•	-	-			720																								957		986		
	0.010	,	•	•	•	•	-		-		019.																						. 000					946	
PRESSURE	0.020 0		•	•	*	*					047.																						100.	•	.823	•		010	1
	0.050 0	5.1.1	110	0 : 1	***	201.	. 521	.602	.695	191.	.637	. 380	.109	9/0.	561.	011	010	184.	9000	910.	0000	.630	960.	200.	9/9.	010.	124.	100.	140		170.	00.	10/	10.	. 712			160.	
ATMOSPHERE	0.100 0	0.71	. 303	.341	.315	.332	. 308	.458	.588	.651	.470	.244	.050	,026	.105	.274	.324	345	1000	.363	166.	964.	.40	004.	200.	064.	. 282	164.	.695	0000	. 200	.000	0,00	000	109.	1001	. (81	.801	179.
1.00 ATM	0.200 0		.25	.205	. 228	.188	.217	.300	.458	.501	.241	.152	.017	.005	540.	.147	.179	. 200	86c.	.236	. 258	646.	.303	.251	t 0 t	. 358	.169		.567	. 200	. 166	.435	.556	. 740	.483	. 600	150.	. 757	. 120
VAPOR 1	0.500 0		6/0.	990.	+/0.	+c0.	.070	.116	.201	.240	.106	.025	.002	000.	.008	.034	.041	181	.102	.085	.105	.107	.141	.093	.203	.104	.002	.241	.355	. 545	.134	.2/3	.376	.362	.303	400	1557	.620	. 500
WATER V	1.000 0		.020	.014	.016	.011	.016	.036	.124	.131	* N34	* 00 x	0110*	000.	.001	*00ª	50U.	.011	. n24	. 022	.035	190.	.057	.030	900.	5/u.	. n19	.114	.195	+1/1+	.093	.10]	. 233	.253	.177	404.	. 433	167.	167.
78	2.000 1		*005	.001	.001	.001	.003	100.	.035	.036	.006	*000	0.00	.000	.000	.000	.000	.001	.005	.002	.007	.016	.015	400*	* 025	.020	.005	. 03H	.075	.00.	.030	.075	.104	.103	.074	.182	. 302	. 747	.321
	5.000		000.	.000	.000	.n00	.000	000.	. 001	.001	000.	0000	.000	.000	.000	.000	.000	.000	0000	000.	000.	000.	* 000	.000	.001	.001	.000	*003	. non.	1000	.002	.011	.015	.016	.012	.063	.133	.160	.155
	10.10 5		000.	.000 ·	000.	V00.	UIIU.	. duh.	100	.000	070.	. nun	Onu.	. nun.	.000	*000	000.	.000	.000	J.00.	000.	.00.	.000	.000	.000	.300 ₽	.000	* 000 U	.000	* 000	. GUD.	.001	.001	.00.1	.001	.016	* N4.P	*057	- ne2
	00 00		0000	.000	000.	0000	000	000	2000	000	Dun.	.000	000	. nun	.000	.000	.000	000.	Duu.	* 000	., ,,,,	.000	.000	000.	.000	* nnn	.000	.000	.000	0000.	* 000 P	.000	.000	000.	000.	*0n2	.005	· 0.09	× 1013
		U	gon.	Don.						0000	0000	Unit	B. Marie	N. Carrie	Mul.	BUD.	000	.0000	000	. Bud	900	000.	000.	Onp.	0000.	*000	duu.	. 000	Bou.	8000.	. Bun.	* 000 m	.000	non.	John.	1000	Joh.	· Und	(Joseph )
		FAE4. 20.42	1000																									*08*S	5440.	5,000	5510.	55201.	5550.	5,040.	5550.	55611.	5570.	5580.	Seatter .



		*	3			2			.00	.01				į	8			. 000	.016	1		1		į	į	į	:	000.	000.	000.	.000	.000	000.	.001	900.	900	000.	
	<b>c</b> .	.6200+00	. 6900+BO	6660400	.6700+00	.6600+00	.6100+00	.6700+00	7500+00	. Tesso+00	00+0064	.7500+00	.7400+00	.7699•96	7486068	7400+60	74.00+00	78584-90	.7100+00	. 7900+00	.7700+00	.6700+00	.8600+00	.8700+00	.8700+00	.1500+01	. 9800000	.9680+00	.9300+00	.9100+00	.910000		.1640+01	. 8488+00	.9266+80	.0660	. 8486+00	
	U(PR.CM.)	.6169+00	. 5482+00	.4670+00	.4493+00	.4164+00	.3099+00	.1850+00	.1228+00	.9665-01	.9511-01	.1195+00	.1199+50	.1045+00	.1091+00	.9635-01	.8519-01	.6429-01	. 9621-01	.6269-01	.6794-01	. 5552-01	.3659-01	.3427-01	.3024-01	.1380-01	.1607-01	.1853-01	.2126-01	.2576-01	.2304-01	1361-01	.9872-02	1932-61	.1595-01	.2268-01	.2537-01	TAKOLOT
	0.001	866.	866	666.	666	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000
	0.002	966.	86.	866.	866.	666	666	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1,000	1,000	1,000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1 000
	0.005	066*	666.	366.	996.	1660	866°	666	666	1.000	1.000	666.	666	666	666	666	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.010	.981	984	686	.991	766.	.995	966.	666.	666.	666	866.	866.	666	666.	666.	666.	666.	666.	1.000	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
ESSURE	0.020	£96°	.96₽	616.	.982	.987	066.	966.	.997	666.	866.	166.	166.	166.	166'	866.	.998	666	666	666.	666.	6660	6660	6660	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	000
ERE PR	0.050	.921	.928	.951	.957	.970	.976	066.	<b>766</b> *	166.	966.	.993	. 992	₩66.	Ž.	86.	.995	1.66	8.	766.	1660	866.	866°	666	6660	666	666	666.	666.	666 *	666 .	1.000	1.000	666	666	666.	666	900
.10 ATMOSPHERE PRESSURE T=300 K	0.100	.868	.876	.912	.920	346.	.955	.981	.987	:663	.991	* 985	.985	.988	.988	686.	066.	766.	. 992	966	.993	166.	166.	166.	866.	666.	666.	666.	866.	.998	866.	666.	666.	666.	566.	.998	.998	100
1.00 AT	0.200	.795	.803	. 849	.860	. 993	.917	196.	4976	.987	.983	.972	. 971	146.	926.	640.	,981	.988	.985	. 988	.987	.993	966.	\$66.	966*	866.	966.	160.	166.	966.	.997	866.	666.	866.	.998	966.	966.	י ססת
VAPUR	0.500	909.	.675	.728	.736	.782	.831	.919	\$46.	.968	.958	.937	.936	146.	.945	.952	.957	.971	.965	.971	696*	* 984	.985	.947	066*	\$66.	766.	€66.	. 992	066.	.992	566.	166.	756.	166.	066.	. 989	986
* ATER	1.000	.538	.551	.603	.608	.659	.735	.859	006.	.938	.923	06H.	. 989	906*	* 902	, 914	. 922	546.	.915	996°	.962	, 968	,971	. 974	.980	6960	.988	, 986	. 985	.981	.983	066.	* 663	.988	.988	.981	010.	.071
	2.000	.393	.410	.457	.458	.507	.612	.763	. B22	.880	.859	.816	.817	.840	.835	*855	. A69	. 902	. 885	. 902	.896	046.	. 44.	8 46 .	.959	.977	* 613	.970	. 965	.96	.965	.978	.983	.974	.973	.965	.959	040.
	5.000	.198	.232	.254	.254	.294	.425	.584	.663	+44.	+717	199.	*671	*700	969.	.724	+124	*800	.771	164.	.789	.865	.867	.874	.897	* 936	.029	.922	.915	006.	.911	176.	. 954	.037	*935	.914	. 908	. A84
	10.60	.061	.105	.122	.124	.150	.279	.414	964.	.552	.5555	.5UB	.515	.546	*544	.590	.625	.67H	.631	.674	.669	.770	.764	+775	.800	.871	α (Ω) •	.846	.835	.810	.830	.879	.903	. A77	.376	. 847	*839	* A06
	20.00	.016	.031	.037	.039	.051	.144	.237	.310	.342	.358	.322	,331	.359	.364	.413	654.	.512	.400	.509	.501	.616	.615	.622	+644	.756	.736	.713	. 701	999.	969.	.768	.807	.115	.774	. 739	.728	069*
	50.00 20.00	.001	-005	.002	*005	*004	.035	.061	.100	.133	.124	.106	.115	.130	.140	.175	.214	.257	.220	.253	.252	1750.	645.	.358	904.	.502	9/4.	10t.	h # # *	90+.	955.	.534	190.	. 299	699.	1250	.508	.468
	FHEG.	5000.	5610.	5020.	5030.	5040.	5050.	5060.	5670.	5080.	2690.	5700.	5710.	5720.	5730.	5740.	5750.	5760.	2770.	5780.	2790.	5800.	5810.	5420.	5430.	5940.	5850.	5860.	2000	5990.	5840.	2900.	5910.	2920.	5930.		5950.	2900

	P EPROP	•	000.	100. 0	•	000. 0	•	•	•	•	•	•	•	•	•	.003	•	Ī	•	•	•	•	•	•	•	•	•	•	#00.	0 .002		0000		£00. 0	•	100. 0	900. 0	
		.7800+00	.7600+00	.7300+00	.7400+00	.7100+00	.7100+00	16900+00	.6700+00	.6800+00	.7300+00	.7400+00	.7600+00	.8200+00	00+00+9.	.5600+00	.6200+00	.6200+00	.6100+00	.8600+00	.7600+00	.5700+00	.6000+00	.7600+00	.7400+00	.7600+00	.7100+00	.6200+00	.5700+00	00+0009.	.7300+00	.7300+00	.7100+00	.6800+0n	.6800+00	.7300+00	.6800+00	.5900+00
U(PR.CM.)	<	.3870-01	.4649-01	.6022-01	.5921-01	.6788-01	10-9004.	.8003-01	.8543-01	. R265-01	.5667-01	.4774-01	.4027-01	.2800-01	.7410-01	.1727+00	.1674+00	.1179+00	.1149+00	.2785-01	.3160-01	.1256+00	.1372+00	.4945-01	. 4894-01	.4369-01	.6110-01	.1180+00	.1760+00	.1792+00	.7968-01	.7710-01	.9327-01	.1191+00	.1342+00	. 9092-01	.1259+00	.2604+00
	0.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	•	-	•	-	•	-	1.000	1.000	*	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	•	1.000
	0.002	1.000	1.000	1.000	1.000	-		-	1.000	-1	1.000	-	-	-	1.000	1.000	1.000	-	-	-	-	-	-	-	•	-	-	-	1.000	1.000	1.000	-	1.000	1.000	-	-	1.000	666.
	0.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.		1.000	-	-	-	1.000	666.	666.			-	•			•	-	-	•		066.	666.	-		666.	666.		1.000		A66.
	0.010	-	1,000	666.	666.	666.	666.	666.	666.	666.	666.	666.	-	-	666.	866.	666.	666.		-	-		•		•	•	•	866.	166.	•	•	666.	666.	666.	666.	666.	. 99B	166.
	0.020	666.	666.	666.	666.	666.	866.	966.	466.	166.	666.	866.	666.	066.	066.	\$66.	666.	966.	.007	066.	666.	966.	966.	666.	666.	666.	666.	166.	566.	560.	466.	. 99a	.998	. 997	166.	466.	160.	166.
	0.050	866.	866.	466.	166.	966.	\$66.	466.	166.	766.	\$66.	966.	.998	866.	966.	.988	966.	. 992	266.	666.	866.	. 991	. 991	.998	966.	166.	966.	. 991	. 987	.987	566.	966.	766.	.993	166.	. 995	666.	.986
۷	0.100	966.	966.	766.	n66.	266.	.991	696.	.988	.989	266.	166.	966.	966.	. 989	916.	: 473	. 993	.985	166.	•	•	. 983	\$66.	566.	\$66.	166.	to6.	.973	926.	166.	166.	. 98B	.981	.987	066.	.985	. 977
	0.200	.991	166.	.987	.988	196.	.983	. 978	1776.	476.	186.	.987	666.	.993	. 379	.955	646.	696.	. 372	166.	266.	. 36A	996.	166.	. 291	.989	.986	.960	: 953	.954	.981	. 983	.079	.975	470.	.981	.971	840.
	0.530	.933	.978	0/0.	.971	400.	.902	.953	.950	2900	900.	.972	.991	. 983	: 955	400.	.892	.932	.939	406.	. 991	.931	. 921	. 378	.974	.973	. 30B	. 933	000.	.901	.901	.961	.952	. 905	040	. 908	906.	. Ac5
	1.000	. aba	096.	,966	8 46 ·	. 937	.935	.941	.918	.920	. 941	.952	906.	0200	.926	77 0 *	.924	. 898	160.	. 971	100.	.837	620.	. 959	040.	· 954	cho.	* AH9	0 038 ·	· 934	+ 924	. 930	176.	:003	946.	. 925	• я8в	.206
	2.000	.939	436.	406.	. 007	4892	. 992	* 87H	. 071	· H75	* 906	120.	140.	htt.	* 800	.705	.734	. 826	. 93H	906.	X+5.	. A27	. 912	.924	.929	:353	. 305	.854	.705	.755	. 974	. 995	. AUS	. H17	. 26.	1120.	.815	·693
	5.000	+ 474 ·	· 852	. A10	* 4.2n	¥ 907	. 19.14	.732	.7311	.774	* 829	. AS.	* W. S. S.	* 9 BU	* 30%	.633	.601	.715	607¢*	* H.9.4	. 49h	.719	.4889	: 3/13	. 452	166.	. A1G	.714	619.	.614	.770	.7777	5 745	.700	.572	.749	.670	.691
	10.07	. Tr. 3	* 70° x	.727.	.710	50L.	.7un	.676	· (177	.679	. 730	.777	. A12	. A33	. 724	.557	· 4116	*004	199.	. 611	.803	* F. 1. P.	. 573	. 740	.764	.704	.724	.611	.513	4000	.629.	(ag.	. 19	. 5w	.525	909.	.576	.343
	50.00	.571	61.00	.582	*574	. 565	. 551	.533	*51b	* 533	.500	.649	1.000	to 64.	.613	* 399	. 341	* 475	.491	.701	.730	.493	.432	*613	119.	.684	0000	9244	. 3RS	. 341	065	. 5n2	46.24	9017	. 152	95 4.	. 364	BUC*
	Pulse!	C 1141.	4.4.4	Sec.	4-1.	306.	. 365	. 534	* 215	. 30.0	. 3/3	174.	. 400	. 301	· +02	.215	.144	+504	.307	4.	.500	. 514	.241	*305	. +13	B 2+ .	5/5.	* du?				* 5003	1,27.	. 11.4	* 1003	.408	107.	.075
	FINE 1.	5.47.7.	SAH 1.	. 1445	0000	5ul11.	6.12 1.	00.50	0311.	bubbu.	0.760.	51711.	odau.	. (400	.1010	6110.	0150.	6130.	6140.	0150.	0160.	0173.	. PG 70	0130.	6230.	0210.	6420.	u230.	0550	0.450	41.05.0x	06/10	6280.	6591.	0.500.	6.510.	6.527	00300



	ERROR	.013	₩00.	600.	800.	. 025	.012	.028	.034	.013	.007	600.	.023	.026	.055	.020	.010	.011	800.	500.	.010	1000	100.	+00.	\$00·	100.	100.	500.	200.	200.	0000	*00.	100.	000.	.001	200.	.015	500.
	a:	.5700+00	00+0019.	.6500+00	.6400+0n	.8200+0u	.6800+0n	.6200+00	.6100+00	.6300+00	.6200+00	.5900+00	.5100+00	.5900+00	00+00 99	00+00+9.	.6600+00	00+0099	.6700+00	.6700+00	.6500+00	.6200+00	.6300+00	.6500+00	.6300+00	.6200+00	.6000+00	.6200+00	00+0099.	00+0099.	10+00+9.	.6300+00	.6600+00	.6800+00	.6500+00	.6500+00	.5600+00	.60000+00
H (PR.CM.)	٧	.2537+00	.1468+00	.1886+00	.2028+00	.1287+00	.1935+00	.3168+00	. 1239+00	.2284+00	.1809+00	.1891+00	00+++62.	.3667+00	.2963+00	.2501+00	.2089+00	.2111+00	.2002+00	.1893+00	.1910+00	.2355+00	.2342+00	.2196+00	.2457+00	.2209+00	.2342+00	.2307+00	.1821+00	1776+00	.1855+00	1991+00	1959+00	.1757+00	.2159+00	.2695+00	.4396+00	.5289+00
	100.0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	066.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0000.	060.
	200.0	660.	660.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666	1.000	1.000	1.000	1.000	1.000	1.000	666.	666	666	6660	666.	666	666.	666.	666.	666	666	666.	1,000	600.	660.	866.	. 098
	500.0	466	966	666	066	066	666	99P.	966.	666.	666.	066	966	466.	666.	066.	066.	066.	666.	066	666.	666.	666	066.	966.	466	866·	866·	666.	066.	666	866°	d66.	466.	466.	966.	966°	966.
	0.010	405	999	966	866.	966	866.	166.	166.	866.	866.	866.	166.	966.	166.	466.	866.	866.	866.	866.	866.	266.	166.	166.	166.	166.	166.	166.	866.	166.	166.	166.	160.	166.	966.	560	266.	066.
DPF S SUBE	0.020	760.	460	300	966	966	966	766	166	366.	966.	966.	:66.	666.	966.	966.	966.	966.	966.	956.	966.	966.	966.	766.	166.	766.	760.	166.	\$60.	996.	560.	. 993	666.	766.	666.	166.	.985	.981
h	,050	TAC.	100	001	060	100	166	. 985	196	686.	066.	066.	.983	.980	.987	989	066.	066.	086.	066.	066.	. 986	.986	.987	,984	.986	.985	.984	. 988	. 988	. 988	· 984	. 984	.986	. 981	.970	196.	456.
HOSPHEH K	.100	470	980	0000	OHO	CHO	K 10	.970	696.	97P.	.980	.980	996.	.962	476.	979.	.980	.980	.981	. 982	.980	479.	476.	476.	.970	: 473	.970	.970	.976	.977	.978	.970	.970	476.	596.	.959	.933	.915
.70 AT	, 20n n	050	073	250	0.0	990	990.	0.43	246.	. 05A	. 963	1961	.916	. 027	040.	.957	. 962	.961	196.	196.	.962	.950	.950	.951	240.	040.	1116.	1176.	956.	.958	096.	996.	546.	. 952	.938	.927	. 882	. 852
APUP 1	.500	0 10	010	.000	. 10	100	170	016	R71	500	018	0	. HO0	B39	. A84	890	911	912	. 916	.018	. 014	. Re9	69ª	.892	. 876	.889	. A81	.882	106.	.911	916.	.843	06d.	.902	. A78	40H.	.775	.722
HTEPS V	0000.	0.11	000	05	2000	940	000	786	.777	. n 3u	000	050.	.768	.729	164.	0	140	2 70.	. 850	. 653	. P49	, p.12	. 210	. P.16	564.	. P15	. A05	. P.07	444	. A52	. 861	. A31	. A25	040.	P004.	.768	599.	265.
•	. 000	707	011	344	711	100	758	. 653	249	726	.770	.761	.652	.586	209.	669	.734	.737	.748	.755	.755	.704	.700	.710	.686	.714	.704	.706	.753	.762	.776	.742	.735	.753	.714	.652	.526	6 44 5
	. 000 2		000.	. 550	500.	100	570.	0000	1015	000	.606	4117	484	177	000	000	4 14	. 840	555	. 571	F. F. P. T.	.621	212	452B	.503	.541	45.74	.531	+584·	.595	.614	.578	.566	.590	545.	.45A	. 332	776.
	0.00 5			064.	174.		1111	100,	040	300	454	17.7	36.7	100	070	107	376	30.4	. 44	404	425	36.5	a dir	1969	346	.391	78F.	.377	124.	430	.462	124.	- do	.431	.383	.295	.196	.120
	20.00 1		107.	.350	002.	040.	0.00	007.	101	010	307	212	25.1	110		160		010	217	010	770	216	200	212	136	241	545	.221	.266	.275	046.	692.	.243	.261	. 220	641.	.093	.041
	50.00		160.				- 4	000.																		. 00.						.046.	. 0.75	.001	. De. 4	.003	0.00	.0u4
	Futtur.		0.00			.0750	0380.	.0559			.03.09	.0000	.0440								65.50	, p.		6560	6570.	0,780	6590.	66000.	6010.	6620.	6030.	6640	. 6650.	6060.	6070	6080.	.0609	6700.

	ERROR	.011	.012	.003	.010	900.	.001	.024	.038	.065	.045	040.	.023	.035	.025	.011	600.	.029	140.	.033	.017	.005	+000.	040.	.013	.004	.014	.052	.022	.026	.022	.011	.013	.032	+000	.015	.021	0000
	α	.6200+00	.5700+00	.6000+00	.5500+00	.5800+00	.6200+00	.5700+0n	.60000+00	00+0009*	.6500+00	.6300+00	.5400+0n	.5900+00	.7000+0n	.6800+0n	.5500+00	.5300+00	.5800+00	. Knn0+0n	.6300+00	. 5900+00	.6400+00	.6300+00	.5500+00	.6300+00	.6800+00	.6300+0n	.5400+00	.5400+00	.5400+00	.5700+00	.5700+00	.5500+00	.6200+00	.6100+00	. 5,800+00	.5700+00
	I ( bk . Ck .	.5116+00	.5357+00	.4405+00	.5792+00	.5276+00	.4383+00	.6752+00	.6565+00	.6511+00	.4521+00	00+1595	. A370+00	.5714+00	. 1281+00	.3839+00	.7188+00	.1430+01	.1798+01	.1135+01	.1037+01	.9881+00	00+0195.	.5837+00	. A464+00	.9401+00	. RO41+00	.9269+00	.1147+01	. 9258+00	.0259+00	.1424+01	.1382+01	.1569+01	.1953+01	.1684+01	.1617+01	.1675+01
	0.001	666.	066.	066.	866.	666.	666.	u66.	166.	166.	166.	b66.	100.	d66.	000.	666.	766.	. 983	.987	666.	366.	966.	a66.	166.	566.	960.	100.	300°	1000.	966.	566.	1,00.	760.	266.	166.	100.	.000	· 080
	0.002	866.	866.	866.	966.	966.	166.	966.	. 995	160.	.995	966.	766.	966.	866.	866.	. 988	.980	.975	. 085	. 091	060.	966.	.093	060.	.002	. 993	000.	. 989	.091	060.	680.	. 988	. 084	. 982	986.	. 980	. 978
	A00.0	766.	766	966.	166.	U66.	.993	.989	.988	· 985	.987	066.	986.	066.	766.	566.	. 973	,954	345	· 965	.977	126.	. 980	.984	. 977	.981	.984	.977	. 973	.97p	.97€	.970	.972	696.	956.	.967	, 954	040.
	0.010	686.	. 988	066.	.982	. 982	.986	646.	776.	.971	926.	.98n	.973	.981	.989	066.	.952	.918	168.	.936	. 957	956.	010.	696.	.957	.963	020.	.957	. 950	. 35R	.954	770.	140.	. 933	.924	.038	.018	000.
PRESSURE	0.020	, 97ª	,076	040.	.966	.965	. 973	.060	.957	944	.957	196.	.950	196.	. 979	.981	.920	. 864	. A 30	+891	.924	.921	696.	1140.	. 923	.034	400.	. 926	.010	570.	.010	.000	. 90g	F 8 8 3	. A67	. A 90	. 863	069.
L	050.0	840.	946.	456.	.928	. 726	. 943	.320	.911	.098	.917	.924	, A94	.922	.953	. 957	.861	.764	£02.	, A04	cha.	. H47	. 923	A90	£44.	. 669	56u.	· nega	626	1144	. AIL	. 905	. H13	.783	144.	.770	.754	.73B
ATMOSPHER	001.0	506.	106.	.918	.879	. 879	906.	.863	.855	. 840	.873	.877	.824	.809	.920	.926	.800	. 605	.592	.715	.709	.76R	.877	.830	.770	.796	.831	.705	.73n	.700	.706	.701	.711	.67B	.528	.600	649.	.676
.00 AT	0.200	. 938	048.	. 465	. 309	. 313	. 955	166.	.775	.701	.913	. 412	. 720	264.	. 971	.877	.722	.546	094.	1094.	.669	.66A	. 114	.754	.658	6699.	13 74 6.	444.	. 175.3	nay.	999.	. 571	. 585	.566	.482	.520	.511	404
AFUR 1	0.500	A. 7.	.719	01.7.	.6.01	269.	.753	769.	059.	129.	0.74	564.	405.	909.	.776	.774	165.	.371	.200	044.	£64.	5 3.	16.63	1770.	141.	. 132	5000	.517	0 4, 1) .	.500	50%.	.300	392	8.71.B	116.	. 121	975	.113
Water of	ann.	CH2.	009.	HAH.	54.57	.5.74	4444	.423	264.	16.00	. HMH.	1777	2200	.531	77	gay.	e72.	.23F	.159	3/15	143	tor.	004.	1.1	. 1116	THE.	.4.30	11/1.	UOX.	. 171	. 173	.256	940.	SOU.	.141	.103	.196	100
	2.0001	. 14.5	1.64.	515	. 117	.4.5"	100.	. 374	345	. 34.11	955	1155.	166.	46.6 "	165.	125.	345	.120	.00.	.171	1.64	.261	. 41.9	11/1.	1816.	.035	.77.	1,52.1	.170	14,00	. 540.	.115	.124	46.0.	"CU.	1.20.	160.	101.
	S Hade	utic.	. Sal.	211.	216	4,004	. 3.13	417	.166	.173	136	.370	.132	.221	. 3 .1.	tor.	.177	.034	-010	1170.	11611.	. Oben	· Sun	106.	.132	* 117.FB	* 11.04		* 111/16	.114	.113	0201	1	100.	5000	.115	* 111 H	1111
	0.440	.170	.134	.173	174	.136	1411	.1170	* 0.70	. 11711	.130	. 1.4.1.	*113.11	.11.	. 200 m	. 140	. next	1.00.	.001	.010	. 113	670.	4 C C.A.	* Dest	5. M. C.	P. 11.1.	*13613	6711.	11211.	1,1971	11.10.	* DUA	*	.000	* () I/D	11.0	001.	· / 11.
	-	U.tu.	211-11	117.11	11611	. A52	.064	1,51.	* 17.7 *	. 124.	110.	. A52	+10.	1) 110 *	W. 67.0	21111	.025	.071	. 100	Tuu.	.001	, nn.	1180°	620.	. 1122	200	.002	- Cub.	. 0013	. D.D.C.	four.		J.10.	13.15.			0000	2001
	N. 11 1. 1		11/3		7110	of D.			100	. Hall	117.	4. D.		1111	. J. F.	* JUR	. Buc	0000	1000	. Jul.	6 11 .	(1111)*	Time.				· Don't	· Harris	117711.	- DV -	· Chill O.				* 3 18		· 11 10 ·	
	F G 11 3	0/11.	white.	0/11.	. M. 1.	0/51.	6/4/11.	0770.	o faire	011.	D.3U 1.	0.11.	5341.	6035d.	19.36.4	. L.C.C.	. Cobb.	6371.	custin.	.0490	C.400.	6910+	6. 11.	6330.	61940.	6356.	nught.	0,771.	.3865	£1911.	Tubu.	/ 111.	10801	70.50.	7.0%	7.1.4.	17111.	Turns

		FRROR	900.	.019	.027	.017	.073	1000	.002	.002	*00.	600.	600.	.003	.020	.011	.028	.015	.100	.053	.007	.008	.016	.004	800.	.021	.010	840.	100.	.072	.013	500.	.012	.022	900.	.011	600.	.032	940.
		α	.6100+00	.5700+00	.5500+00	.6100+00	.4800+00	.5800+00	.6000+00	.6300+00	.6200+00	.5800+00	.5800+00	.6100+00	.5900+00	.6100+00	.5600+00	.5600+00	.4600+00	00+0064.	.6500+00	.6500+00	.6100+00	.6300+00	.6200+00	00+00+9*	.5800+00	.6500+00	00+0009.	.6300+00	.5900+00	.6200+00	.5800+00	.5100+00	.6100+00	.6300+00	.5700+00	.5900+0n	.6300+00
	( (PR.CM.)	4	10+91610	.2301+01	.1937+01	.1688+01	.2313+01	.3338+01	.2765+01	.2510+01	.2552+01	.2793+01	.2781+01	.2747+01	.4147+01	.5550+01	.6280+01	.8184+01	.6289+01	.3093+01	.1933+01	.1930+01	.1587+01	.1591.+01	.1887+01	.2198+01	.2702+01	.4351+01	.4550+01	.4394+01	.3242+01	.3061+01	.3402+01	.2728+01	.2167+01	.2261+01	.2485+01	.1756+01	.1600+01
		100.0	.988	.982	186.	.989	916.	.972	876.	.980	.981	026.	146.	.981	.972	096.	.937	006.	.876	.926	. 986	.987	.987	186.	986.	8 4 b .	696.	096.	.95A	.962	.072	. 474	. 973	. 975	. 986	. 98ª	n86 *	* 08B	666.
		200.0	.977	996.	076.	646.	.956	146.	656.	.963	196.	540.	846.	196.	996.	.925	.885	. 828	164.	. 880	926.	926.	.975	.971	476.	.961	546.	.928	. 925	.931	676.	.951	696 *	. 952	. 973	.978	690.	120.	486.
		0.00%	946.	.925	.932	136.	106.	.887	.911	.922	.924	168.	.897	.922	.884	.839	.771	.687	,654	.795	946.	776.	596.	046.	546.	.951	.891	.859	.850	.860	168.	.890	.884	.895	936	046.	.929	146.	.963
		0.010	306.	.871	. A84	016.	.868	. 415	. A54	.875	.974	.829	.837	.867	. A04	.738	.648	.551	.523	.710	.911	800.	806.	.901	806.	. A70	. A31	.780	.763	.776	. 828	. A37	.815	.823	. 493	.901	. 873	500.	. 931
PRESSURE		.020	843	.793	.813	.866	.769	.710	.77t	· 80a	.802	.743	1,54.	.788	609.	t09.	.505	104.	.379	.607	.855	.851	.854	944.	.853	. A17	.750	.675	.661	1994	.730	.792	.712	.724	. 925	.815	.745	1 170.	.800
_		.050	.724	.653	.681	.759	.630	. 555	.631	619.	199.	. 593	· 604	.641	.503	300	. 305	.211	.201	.456	.744	044.	.753	.763	.763	B69.	.610	.500	.461	.462	.580	.601	.541	. 562	.69B	+04.	.651	.725	.773
ATMOSPHE PO K		.100	509.	.522	. 556	249.	.500	.410	964.	649.	.534	094.	694.	.502	.347	.247	.173	.101	.102	.343	.630	.627	.651	.618	.675	.578	614.	.351	.310	.333	.43A	.482	.397	.457	.575	.574	.516	.611	209.
. 00 AT		0.200 0	.468	.381	.420	.510	. 360	.263	. 347	161.	. 385	. 122	. 12A	. 151	. 201	.121.	.776	.135	7770.	.235	687.	164.	.524	.513	181.	.437	. 136	.206	.172	161.	. 28J	. 113	.256	266.	.433	474.	£ 369	624.	.524
VAPUP 1		. 500	.27B	1000.	142.	.313	.109	.104	.101.	.199	.192	.156	.159	.156	.003	.026	.013	+00.	.010	.112	.203	062.	.3+3	.332	.204	.2+2	.101	.005	640.	100.	.115	.136	.104	.143	.241	.254	.105	54.6 *	.235
» TEF <		0000.	.146	.103	.139	.176	560.	• 035	+00·	.083	. UHO.	.165	990.	596.	. n15	* 00t	.002	000.	.002	040.	.146	.140	500.	2000	.148	.116	. neg	.015	.011	.015	.036	640.	.035	990.	.118	.101	.082	.170	.196
		· Lou.	450.	. 13/	.000	.070.	.034	.00.	.015	.020.	.017	410.	· 110.	.015	.003	.000	.000	11Cu*	1100.	.015	.051	.051	160.	660.	060.	.050	.Tu.	.0)1	.001	100.	.00.	, nc.	. MU6.	. 121	.034	.030	(,7h.	.070	150.
		· total	3000	1004	010	· 1113	960.	000.	0000.	.001	. 401	000.	.000	1100.	.000	.000	.000	.000	.000	.001	<b>500.</b>	500.	.014	. 1115	900.	.002	.001	000.	0000	000.	000.	000.	.010	200.	.003	* 000	. 902	- 115	. 114
			A00.	P.C.A.	1000	* 011.1	. m. 1	· UF .)	0000	.000	war.	.360	.010.	D110.	1.10.	. Out	000.	1100	.300	0.00	600.	600.	.00.	.00.	100.		500.	. 10.1	600.		.000	. 0	. 0.0	( 111)	.000	.000	0.00	.001	. 0.113
		1.0.0.1.	17 UU-	.000	000.	Hou.	.000	י שעט.	0000	.000	060.	000.	GUU.	· uuu	000.	000.	6000.	006.	0000*	.000	000.	000.	066.	.000	000.	. non.	.000	.000	. 000		* CU.	0006.		600.	.000	. 000	.000	000.	000.
			*****	11.16.	Alteria.	. Dan.		unn.	001.	. U.D.	Public	· Unni	000.	nuv.	. Unit	* (10.11	. Duth	"000°	cop.	* 30m	. unn	. Joh	· non.	.000	, UU/	100.	6 96 .			(00.	Dr. 11 *	.000	1.77.1	"DOG"	"non.	. unn.	6.00	Chr.	. 20.
			1.31.31	704	7100.	7110.	7120.	71.40.	7140.	71500	7160.	71/0.	7130.	7190.	7200.	7210.	7420.	7230.	7240.	7250.	1260.	72701.	7,480.	1540.	/300.	7310.	1329.	/334.	7.540.		1360.	15/0.	1380.	7390.	7+00.		1420.		/

B-57

		FRROR	.055	.011	600.	.070	.041	.059	.012	.014	.017	.008	.005	.004	900.	.051	.063	.037	.025	.022	.003	.002	.010	.033	.014	.025	.012	.007	.003	.002	.001	.001	.001	.001	000.	.005	000.	000.	000
		Œ	.5400+00	.6100+00	.6000+00	.5200+00	.5800+00	.5300+00	.6300+00	.6690+00	.6700+00	.6300+00	.6200+00	.6000+00	.6100+00	.6800+00	.7000+00	.6300+00	.6300+00	.6100+00	.6300+00	.5800+00	.5800+0n	.6000+00	.6000+00	.6200+0n	.60000+00	.5700+00	.6100+00	.5800+00	.6200+00	.6300+00	.6600+00	.6600+00	.7100+00	.7300+00	.7700+00	.7800+00	. A100+00
	U(PR.CM.)	4	.2018+01	.2165+01	.2217+01	.2107+01	.1794+01	.1260+01	.7444+00	.6814+00	.7745+00	.8337+00	.6319+00	.6821+00	. R262+00	.9017+00	.7541+00	.9321+00	. A310+00	.7022+00	.6824+00	.7901+00	.7188+00	.5899+00	.4703+00	. 7671+00	.3661+00	.3826+00	.2628+00	.2590+00	.1845+00	.1647+00	.1037+00	.9173-01	.5247-01	.4289-01	.4477-01	.4092-01	.2116-01
		0.001	986.	. 98A	. 98 A	.986	. 98A	166.	366.	960.	×66.	.003	560.	.00.	160.	.001	600.	. 080	166.	100.	\$60.	766.	500.	966.	160.	. 09A	860.	466.	000.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
		0.002	176.	.971	946.	.976	776.	.982	.991	.989	.987	.986	066.	.987	.983	. 982	.985	.980	.986	. 987	066.	. 988	. 991	.993	\$66.	966.	160.	100.	866.	666.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
		0.005	776.	.967	776.	016.	946.	.950	.970	. 977	.972	0.26	. 97A	. 973	196.	.962	.96₽	786.	696.	.971	. 977	.973	. 97A	. 982	. 988	066.	666.	:663	966.	166.	866.	466.	066.	1.000	1.000	1.000	1.000	1.000	1.000
		0.010	406.	506.	.901	768.	t06.	.924	.961	.960	.953	646.	. 963	.956	.942	. 939	946.	.929	. 948	. 951	.960	.952	.961	.966	. 977	. 982	. 985	.987	. 993	166.	166.	166.	0000.	666.	666.	1.000	1.000	1.000	1.000
PRESSUBE		0.020	.839	.819	.858	.876	.840	* 87A	.935	.936	.924	. 91A	U+16 *	.932	.912	. 907	. 915	.891	. 91A	.923	.035	. 920	.934	140.	.050	. 067	.972	.975	. 986	. 988	. 993	566.	B 000.	406°	666.	0000.	666.	060.	1.000
		0.050	.712	.711	.709	169.	.720	.707	.880	. A86	.868	.859	468.	* 8.84	.855	.846	. A57	. A23	. A61	. A71	.888	* R66	. РВ1	.890	.918	.031	uto.	776.	196.	. 972	ty 36.	. 987	266.	566.	160.	d66.	866.	. 09B	6666
TMOSPHERE 0 K		0.100	.587	.583	.579	. 50A	£09.	169.	.820	.83⊓	.809	.795	.843	.810	.793	.787	962.	.754	.802	.815	.836	.807	.857	. A37	.873	.891	.902	706.	1 46.	u + 5.	.960	.975	.967	166.	566.	166.	966.	966*	866.
1.00 △		0.200	344.	.436	.429	.421	* 40P	.489	.739	* 756	.730	.710	.773	.757	.712	669.	.715	.663	.721	.745	.765	.729	,754	.767	. R14	* F 3 F	4.950	. 450	. 901	. 910	240.	4956	916.	196.	060.	160.	. 000	. ng2	966.
d dy		0.5.0	400.	.234	.228	.231	+0€.	.421	565.	.622	. 509	.561	1414.	.626	. 573	.956	.572	.511	925.	.612	*6.52	. Sus	. 523	*11.42	.717	.7.5	. 73B	17.74		* NOH.	. RUB.	.903	040.	21,00	. 675	. 900 F	000.	300.	U+16.
ANTER.		1,000	.1.54	.117	.108	.118	.162	. 280	500.	.491	.151	* 425	.543	UB's*	055.	. 1422	*#36	. 77A	. 439	.489	305.	+1157	.493	U23.	. 6.U.1	.65.	.606	. F. CO.		401.	. 027	. 54.7	500.	170.	1000	+ 96°	. ob?	900.	v96.
		.00.	*0.82	*300	.00%	44.	* 072	.17	.314	. 141.	. 296	.276	11/11	.356	. 291	.274	.285	*2334	6 to 6 *	. 7.7.1	+ +	. 100	340	.302	+///	. 00	000	* 11.	.00.	1000	. 74			.80	To.				· 100.
		000.	4004	*110.5	* 00.	100.	.012	* nc7	.136	.145	• 100	* 105	*186	0.1.	.112	4004	*104	* DB4	* 1111	.149	. 15E	. 1.75	.165	1000	1.6.	000.	0/2.	1000	0	1110.	· 600 3	174	001.	. 700	. Alter			. 900	40 to 4
			* (1)) 1	* Dec P	. 36.	*100	* 000	* 014	F (1)4+16	* U+7	* 053	* A29	* 11 7A.	.00.	. 833	* U. 4	* 0.2es	.020	1000	* Den		.000	. Dir.	. Digit	07.		167.								07.		1 57 .		1 11.0
			. Tilena		* 11011	00	000.	200	1000	1000	. 00 3	* 01.14	* 017		900.	2000	. 102	× 005	* C D 14	.012			100	200			1 1 1 1			11.0					150.			100.0	
		7.1.0	-	· line		. dun	0000	* 000	.000	* 0.00	0000	DIVO.	1000	1000	8000	.00	* 0000	* Contr	0000	.000 ·	100.			2000	1000		130.					* 1			2.				1100.
			114.7	7 46			+ 116+7	1 11	1211	1000		1040	1000	1,2611.	17/11	10m.	1250.	/a00.	· intro	1000		10401	. 0000	· nool					277			77							

	FRROR	000													. 000			000			000				000	.000	000		000	000							000	000.
	α	100001	1020401	100001	10000	10.000	200000	000000	00.000	00.00	8600+00	A400+00	000000	. A900+00	9200+00	9700+00	. 9500+00	1030+01	9800+00	9800+00	00+00+00	7500400	7300+00	7400+00	7400+00	.7000+00	6900+00	.6800+00	.6500+00	.6700+00	7000+00	.6400+00	6200400	. S200+00	.6100+00	.6700+00	.6300+00	.6400+00
	H(PR.CK.	5619-02	00-000	. 4717-02	26.28-02	1141-01	1500-01	10-0561.	20-063.	1050-01	. A . A . O .	. R212-02	.3616-02	-5119-02	.3916-02	. 3255-02	.3436-02	.2332-02	. 1465-02	.3055-02	.4231-02	.1543-01	1719-01	.1809-01	.1825-01	.2075-01	10-676.	.2915-01	.4026-01	.4230-01	100001	.5073-01	. 5878-01	10-7797.	.5466-01	. 1217-01	.5436-01	.4921-01
	0.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000
	0.002	1.000	1.000	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	0.005	1.000	*	-	-	-	-				-		-	1.000	-	1.000	•	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
LLI	0.010	1.000		-	-	-	***	-	-	-	•	-	-	1.000	-	1.000	•	1.000	1.000	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666		1.000	1.000	1.000	1.000
PRESSURE	0.020	1.000	-		-		-		-	-	•	1.000	***	1.000	***	1.000	-	1.000	1.000	1.000	*	1.000	1.000	1.000	1.000	1.000	1.000	666.		. 990	666.	666.	666.	066.	.990	1.000	666.	060.
L	0.050	1.000	1.000	***	*	666.		•	666.	666.	-	•	-	1.000	•	1.000	-	-	•	1.000	1.000	666.	666.	666.	066.	666.	666.	666.	966.	866.	866·	.997	.997	166.	. 997	066.	166.	166.
. NO ATMOSPHER TENOR K	0.100	666.	066.		-	666.	866.	666.	866°	666.	666.	666.	1.000	666.		-	***	1	1.000	1.000	1.000	u66.	866.	666	.998	866°	866.	166.	966.	966.	966.	\$66.	466.	166.	166°	166.	766.	366.
1.00 AT	0.200	866.	666.	. 999	666.	966.	966.	160.	. 997	166.	866.	866.	666.		•	660.	666.	666.	666.	060.	066.	166.	966.	166.	166.	966.	966.	\$66.	.993	•	. 393	1.991)	. 98A	.987	. 989	166	. 989	.990
VAPUR	0.500	966.	966	966.	.098	.991	066.	\$66.	650.	:093	\$66.	\$ 662	. 998	166.	860.	666.	.038	666.	866.	666.	666.	.932	.992	.993	. 912	.941	686.	. 308	. 9A.	. 962	to6.	.977	.9/3	. 970	1/5.	. 935	476.	.376
AL TER	1.000	260.	260.	. ng.	960.	400.	.962	. 98A	.986	.987	060.	.091	. 995	160.	360.	966.	· 465	160.	260.	166.	960.	. 306	, 984	. 365	300.	. 9d3	.970	. 777	900.	. 266	0/6.	. 758	.951	U40.	990.	.972	7000	.750
	2.000	.9.85	185.	200.	666.	: 972	. 13711	.980	. 975	126.	- 385	. 69.	166.	. 96 .	166.			.66.	. 66.	t.66.	666.	.074	.972	. 25.	10.	.00.	. 9451	. 05 H	240.	. 934	.06.	.927	To.	. 014	. 22.	. 955	. 450	. 20.
	5.000		•	. 074		•	•	•	•	150.	•		•	٠	•			. 497			. 4331	6+6.	940.	240.	. 94]	.937	.918	.015	. RB6	*880		. Ago	. 471	E 17 17 .	246.	. 908	.836	
	10.07	1.76.	040.	. 35.	506.	.015	. 10.	.935	+7c .	. 90	.939	1,16.	· 40	106.	. 00.	. 900	. 960	11/6.	. 20		. 00.	. 916	010.	. 96.	. 1961.	. 430	*Bon	· Ace	· 1130	*114	* 77.	*796		.775	16/10	, HOF		. 40
	20.00	606.	* 905	* 914	• 930	* 852	.860	.890	.873	.683	י שטת	.907	.941	.432	. 943	* 117	*	10.	156.	. 945		. 465	*858	C. 5 a .	*864	*844	.801	161.	.750	. (2)	00/-	* 70.4		.670	1000	* 7.84	.0.0	
	53.00 20.0	.75.																									100.	1.00.	. 200	.00.	+1301+	1	170.	570.	* 707	*0.		
	FALL 1.	7320.	7050.	7040.	1350.	7960.	1070.	7.849.	75,311.	7900.	/910.	.024/	1,43.1.		1930	1300	19/0.	1300.	1330.	8000.	8010.	*0709	41.500	0040	.0000	auto.	40700	6,000.	6330	0100		0100	.0070	0.10	.0070	.0010		



FRROF		.009	.004	100	2 4	*00.	. 006	.002	#00·	*054	.031	. 965	. 005	. 563	. 005	. 687	. 503	.002	.001	.013	900.	.001	.001	*00.	.015	.010	.032	. 025	600.	600.	.018	.013	.001	.002	.002	
		.5600+00	.5400+00	5700400	S. S	00.0000	00+0010.	* 5100+00	.5606+00	· 5600+00	.6000+00	.6000+00	*6100+00	00+00790	.5700+00	.5800+00	.6000+00	.6100+00	00+0049	6500+00	2990+00	,6150+00	.6200+00	.6300+00	· 5980+00	. 5800+00	. 4900+00	.5000+00	.5700+00	.5900+00	.6600+00	.6100+00	.6100+00	.5600+00	.6000+00	A SOLA BO
U(PR.CM.		*1638+00	.1472+00	.1437+00	1640400	34 6 6 4 9 9 9 9	0040177	004/001	00+01020	*2752+00	*2358+00	+2430+00	.2578+00	2283400	.3426+00	.3621+00	3146+00	*3336+00	.3008+00	.3011+00	*2735+00	.2355+00	.2385+00	.2728+00	* 3980+00	*7128+D0	.1230+01	.1147+01	.6269+00	· 3329+00	*2402+00	*2682+00	00+6646.	.3176+00	. 1961+00	TOO TAND
0.001		1.000	1.000	1.000	1.000	1.000	000	000	0000	1.000	1.000	1.000	1.000	1.000	566.	666.	066	* 000	555.	566.	566.	066.	566.	0000	0000	0 10 00	200	7 0	2000	566	1.000	566.	066.	666	666.	0000
0.002		1.000	1,000	1.000	1.000	1.000	1.000	1.000	000	0000	***	5000	666	6664	9250	964.	0000	866	0000	966	0000	555	5550	6666	6444	0000	0000	0000	0000	555	6666	966.	986	0000	166.	000
0.005	000	5660	656.	666	6660	066.	000	900	000	000	000	000	000	000	000	9550	. 736	955	044	999	000	100	200	000	000	070	070	000	000	100	166	000	955	566	3500	455.
0.010	900	0000	966.	. 998	866.	766.	. 998	.997	906	. 907	000	000	. 008	000	000	200	066	100	000	000	000	700	000	.00%	OBO.	6 70	. 96.	080	000	000	1000	2660	266	000	000	115,5.
0.020	900		466.	966.	966.	966"	966	766.	666	966	. 995	000	100	OBO	. Opp.	000	000	000	080	. 981	OBO	980	000	. 987	. 96.2	. B9a	. 891	. 966	. 98/2	000	. 000	000			000	1000
0.050	996	900	100	166.	066-	. 987	066.	* 985	.981	. 986	. 981	970	. 97B	£ 96 ª	196	1967	. 96.	. 964	. 957	096.	974	.975	. 977	. 968	. 919	.802	.807	. 926	. 974	1070	. 967	. 967	083	.950	196.	TOTAL .
0.100	. 977	0110	200	0000	016.	4974	. 981	.971	,964	. 973	496.	096*	.961	.935	.935	170	.936	776	. 928	.914	.955	.956	.95B	146.	.864	.704	*704	.878	.951	750	000	946.	000	.916	916.	-
002.0	.956	. 965	000	. 10	196.	.951	. 96	2460	. 933	646 *	.937	.930	. 932	. 893	168.	406.	. A96	. 908	.887	.849	, 925	, 926	.927	* A97	.782	.586	065*	* R04	.912	166.	. 911	.913	· 889	. A6A	.897	
0.5.0	906*	£ 65°	100	176.	075.	*836	.919	. A 31	. 802	. 842	. B76	.863	. A70	. A09	.802	* R25	.814	.831	.805	. P 30	.803	408.	.859	. A30	,631	.410	475	029.	.825	. 847	. A +1	. 869	.813	4774	. F17	
1.000	. A47	. A71	27.0		TOWN	57Y	* 862	·827	.780	* A21	. 903	.786	164.	.717	+04	.736	.723	646.	.716	*755	.793	.791	.776	.691	065.	.280	. 301	.539	.727	.703	494.	.77R	.733	.672	.727.	
2.000	.771	. AU2	. 906	784	200	70	001	1111	*674	.741	* 702	1894	1691	565.	.579	.619	.603	+626	.690	1691	4694	1691	169.	. 555	046.	.168	.109	266.	+604	+69+	.66.	.643	.623	575.	909.	
2.000	*650	*6A9	.687	1997	003		140.	2114.	. 1.92	945.	. 525	1657	. 525	.416	.388	.431	1000	*430	.413	*485	* 529	. 521	1940	.340	.101	590.	1700	5000	*414	*475	265.	.518	* 451	1242	.496	-
10.00	49.45	. 5003	1777	C 1546 13	F 41.00	2013			* 200			1 + 5 +	.374	472°	*244	*290	.251	.270	.263	* 345	. 365	.370	.301	. 2003		17000	1700	160×	.261	.372	. 36.1	.371	.316	2000	1561	E
50.00	484.	4474	*451	25h.	. 307	360	1111	210	1000	2024	627.	0.110	. 223	*100	. 125	.147	,124	.131	.132	.203	. 200	4714	.104	060.	07.	0000	0000	700.	1.41	0/1:	1/10	027.	. 1.45	24.0 *	# 17 .	12.4.4
20.00	H27.	.301	*200	.247	. 141	. 175	4.16.7	11110	1000	* 100 *		2000	0.0	+0+	100.	0000	170.	570.	120.	* 000	1100	000.	7+0.	6700	7000		* 1111	0.00	0000		0000	11/20	807.	970*	170.	
FREG.	409cg	40/69	40868	8590 *	8500.	8610.	8620.	8030.	A C C C C C C C C C C C C C C C C C C C	Robo.	8560	10000			4700	01000	0/10	0770	0.75	8740	4740	4770	474.	H 790.	BARDO	BATT.	4920.	HA SU	Boston .	. 0.40.	* 0000					

	FRROR	.003	900.	.007	+00.	.008	.021	.005	.005	6000	1000	.005	600.	900.	.001	.003	.002	.001	000	0000	0000	0000	0000	000.	000*	0000	000.	0000	000.	000.	000.	000.	.000	000.	.000	000.	000
	Œ	.5800+00	.5700+00	.5700+00	.5900+00	.5700+00	.5500+00	.5800+00	.5900+00	.5700+00	.5900+00	.6400+00	.5800+00	.5600+00	.6600+00	.6200+00	.6100+00	.5900+00	.6100+00	.6300+00	.6200+00	.6300+0n	.6000+00	.6200+00	.6300+00	.6400+00	00+0049.	.6400+00	.6300+00	.62n0+0n	.6500+0n	.6600+00	.6300+00	.6500+00	.6300+00	.6200+00	COTOCOS
	HEPR.CM.	.3706+00	.4111+00	*4530+00	.3471+00	.3866+00	.3665+00	.2379+00	.2261+00	.2484+00	2049+00	.1557+00	.2476+00	.2148+00	.9993-01	.1403+00	.1391+00	.1154+00	.1009+00	.9131-01	.7949-01	.6390-01	.8702-01	.9787-01	·8628-01	.7292-01	.6132-01	.5506-01	.6178-01	.6481-01	.5221-01	.5569-01	.5074-01	.4098-01	10-4244.	.4777-01	1000000
	0.001	666.	666.	666.	066.	066.	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	
		866.	866.	866.	666.	666.	660.	666.	666.	1.000	1.000	1.000	666	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-	1.000	-	-	1.000	•	-	-	1.000	-	1.000	•	•
	0.02n 0.010 0.005 0.002	996.	966.	366.	966*	166.	166.	866€	6660	666.	066.	666.	966.	066.	666.	066.	066.	060	066.	066.	666.	1.000	666.	660.	666.	066.	1.000	1.000	066.	066.	1.000	1.000	1.000	1.000	-	1.000	•
	0.010	066.	. 991	060.	260.	\$66.	160.	166.	166.	166.	166.	866.	166.	160.	666.	666.	866.	. 998	. 99A	.998	666.	666.	666.	866.	866.	666.	666.	666.	660.	666.	666.	666.	666.	•		1.000	•
PRESSURE	0.020	. 081	. 982	.981	. 986	. 986	. 98R	200.	760.	766.	366.	. 997	700.	166.	866°	160.	166.	966 *	400.	166.	.997	. 99A	766.	966.	. 997	.007	.998	999 ·	A66.	960.	866.	466.	066.	6666	666.	066.	000
AF PR	0.05n	966.	0000.	950.	996.	. 96B	. 972	. 983	.985	.985	. 988	266.	.985	.986	400.	266.	366.	166.	100.	266.	466.	. 995	. 993	.991	260.	. 993	566.	966.	960.	900.	966.	966.	966.	866.	166.	166.	000
ATMOSPHE	0.100	928	7.6.	010.	. 93B	016.	446.	p96.	.972	.971	.976	-98€	.971	.972	.98A	496.	196.	£86.	496	.986	989	166.	.986	.983	.985	. 98A	U66.	266.	166.	166.	.991	266.	166.	566.	766.	166.	100
1.00 ATA	0.200	. AR.2	. A76.	. A6.2	, A G2	669.	0000	9400	946.	640.	. 955	. 971	770.	846.	. 97B	.070	.960	* 968	170.	.075	979.	.981	. 975	090.	. 973	-76.	. 982	.985	.982	.982	.986	. 986	186.	166.	080.	. 980	0000
VAPUR	003.0	.704	172	7+0	2000	797	\$11.50	613.	. FI.14	. Fon	500.	.033	. Red	. RH9	000.	1000	.031	. P. 5	Cho.	0	7.00.	400°	0110.	.019	940.	6.65	. ach	. 969	.903	. 903	.970	800.	.971	. 979	.976	.075	36.00
MATER	, non.	17.7	The First	. 6.37	, 7U4	. (A. 6)	.701	364.	. ALLB	C7U.	. 035	. AHD	STR.	. P. 1	2.7.	. 1351	S 18 .	. P.94	. 906	.016	9.950	cto.	0.00.	.00.	310.	176.	. 941	940.	040.	.03B	050.	300.	.052	. 363	Histor.	1.67	The Control
,	1000	7.5	4774	5.04	460%	10,479	71	A634.	.700	16.1.	.7.	700	. 7411	101.	11.11.	. ft.g*.			. P. 1, F.	. Fres 14	6,4 6,0	105.	1773.	H. 4.	171.	1160.	1000	.010.	700.	400.	.021	. ola	.924	. 93"	. 0 5 3	.751	
	000.0	7 . 7 .	37.6	1112	4 211.4	. 171	20E.	1,5,74,	. Then	CC,2.	1012 30	* F 14.3	* 4.07	. S. P.T.	7.7.	. F. 7F	209.	124.	. 7r G	.774	* R(15	92 11.	.793	.76.6	. 7AA.	* H13	Othu.	* AF, 7	0.00	.9.34	. 44.1	24/1.	4. Bush	* H. I. H.	6000	. 75	
	(Itenti	2001	716	0.1.	3 · C	2333	The Car	4 2 . C.	1		1	1 17.		7.44.4	· Fred	Fred.	. 578	.6.67	T. F. F.	. F.7 :	1111	71.	.70	A fre f	109.	.725	. 74.	. 7nh	. 74.5	. 74.7	. 74.0	.7/1	* (1) (1) *	.35	14.00	* 11. *	
	000	190		THE .	11 4 11	4117	1111	2.4.6	3.9.	15.11.5	70.	733		. 711	5 14 m	. t. f. f.	. 416		1 7 7 .	1 7 1	Party.	4.1.1.11			7.4.7	*4/U.N.	4 ( 7 ) 3	F 4.7.	. f.6.4	A. F. F. P.	\$ 4.93	***	.71	0.02		. 7	
	0.11						240	5	77.1.			200	1	· INO	1000	10.7	6000		19.1.	346.	11.11		* I. udi			174.	1 1 4 4	117.	404.	104.	. 777.		11711	* 236		Date.	
	FIGER			or ship .	With.	17.57		4394	Bullio.	Stull .	11.511	40.01	SOUND.	Subit.	Sept.	91.76	Strill.	9000	Capille.			9130.	9141	9150	91016	11.11	915.	9140.	9201.	92111.	9400	9240.	35.40 ·	16.50.	92611.	4477.00	



	ERROR	.000	.000	000	.000	. 660	000	.000	000	000.	0000	.000	.000	.000	000	000	000.	.000	. 800	000.	.000	.000	000.	.000	.000	.000	.008	.000	000.	.000	.000	000	000	000	000	000.	000.
	α	.6300+00	.6700+00	.6500+00	.6300+00	6300+00	.5700+00	.6800+00	.7700+00	.7100+00	.7200+00	.7100+00	.8400+00	.8600+0n	00+0066.	10000+01	.9800+00	.9200+00	. 8400+00	1040+01	.9300+00	.9100+00	.9500+0n	00+00%6.	.7*00+00	.9200+00	.8400+00	.8500+00	.8400+00	.7800+00	.7800+00	.7400+00	.8500+00	.7600+00	.7600+00	.7500+00	.7500+00
	HIPR.CM.)	.3125-01	.2017-01	*2241-01	.2196-01	.2344-01	.1525-01	. 1299-01	.5301-02	. 8114-02	.6920-02	,7576-02	-2770-02	.2868-02	49362-03	. 9434-03	.1090-02	.1462-02	.2481-02	.1568-02	.127202	.2391-02	.1612-02	.1620-02	.3756-02	.2200-02	. 4422-02	.4853-02	.3803-02	.7196-02	.7196-02	.1173-01	.1062-01	.9657-02	.9551-02	.1059-01	.9533-02
	0.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000
	0.002	1.000	1,000	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1,000	1,000	1.000	1,000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000		ert.	-	1.000	1.000		ů			1.000	-	1.000	1.000	1.000	1.000
	0.005	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	e seri	1,000	1.000	1.000	1.000	1.000	1.000	**	1.000	1.	1.000	-		-			**	1.000	64		1.000	1.000	1.000	1.000	1,000	1.000	1.000
ш	0.010	1.000	1.000	1.000	***	1.	1.000	***	1.000	1,000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.	-	***	-	-		.;	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
.00 ATMOSPHERE PRESSURE T=300 K	0.020	666*	1.000	1.000	1.000	1.000	e pref	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1,000	1.000	1.000		1.	-	got	-	*	-	***		1.000	1.000	1.000	1.000	1.000	1.000	1.000
TERE P	0.050	.998	666*	666*	666*	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1,000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
THOSPH TO K	0.100	166.	866.	.998	866.	8660	666"	666"	1,000	666.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666.	666.	. 990	666.	066.
1.00 AT	0.200	466.	166.	966.	966 .	966*	. 99R	* 99A	6666 *	666.	6660	666.	1.000	1.000	1.000	-		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	666.	666	1.000	666.	6660.	. 99B	. 398	. 99R	. 098	666.	. 000
VAPOR	0.500	. 986	266.	.991	.991	066.	.995	\$66.	866*	166.	.998	866.	666.	666*	1.000	1.000	1.000	666*	6666.	666*	666.	666.	666	666.	666	666.	* 998	.998	666.	866.	866.	966.	\$660	166.	966.	966.	966.
MATER	1,000	.974	. 984	.982	. 983	.982	160.	166.	966.	766.	\$66.	\$66.	860.	860.	660 *	666.	666.	666.	860.	866.	666.	.998	666.	666.	966.	866.	966.	966.	166.	\$60.	\$66.	. 991	066.	:66.	666.	266.	100
	2,000	+36+	.971	+ 90 ·	. 900	196.	. 985	.987	666.	686*	.661	160.	. 996	966.	H66.	H66.	.099	166.	466.	966*	. 994	666.	166.	166.	966.	966 *	.993	166.	160.	166.	66.	196.	.961	196.	. 986	* 935	* 9H6
	3*400	*916	2+6.	*937	040 .	.936	+96t*	4.90.5	.931	.976	.979	* 97B	066.	636.4	. 995	966.	566.	160.	166.	.991	966.	166.	. 993	266.	066.	166.	1000	. 983	986*	.976	976.	196.	* 957	696*	696*	. 966	× 969
	10.00	.A71	* 90g	c06.	H06.	c06.	140.	.934	.967	.95A	. 90 °	.9p1	106.	.300	166.	.991	* 360	* 96A	* 983	* 982	696.	186.	* 986	986.	. 980	636	17.6	. 96H	1/6.	. 957	100.	. 935	* 92F	V + C .	. 44	156.	. 770
	20,00	.010	* H54	150.	.862	+ 753	- 30D	. 301	P#15.	. 931	000	. 934	* 965	.961	286 ·	. 991	626.	116.	696 .	1961	.979	.961	216.	.973	196.	*365	046.	246.	751.*	* 925	422	. 893	*876	106.	* 30B	* 901	
	50.00 PM.00	.000	. 750	+107.	+114	.701	.375	.003	660.	+3/9	* d'32	* do7	626.	176.	406.	* 924	105.	* 94B	.926	. 912	* 953	* 940	906.	. 438	. 330	. 353	5000	.003	106.	.000	1000.	075.	++/.	· 953	.031	170.	
	FAL D.	9300.	9310.	9320+	9330.	9 340.	9350.	3060.	9373.	9780.	4277.	3400.	9417.	9420*	9+50.	3440.	94501	9400.	9470.	4480.	9490.	9500.	9310.	9250.	9550.	9540.	40001	1000	9370.	3080.	3030.	3000.	9010.	902.1.	1000.	1040	



	ERROP	.001	100.	1000	.001	.001	0000.	.000	.001	000.	0000	000.	000.	.001	.001	0000	000.	.003	.002	0000	.003	t00.	.005	000.	000.	.002	.002	.005	0000.	000.	.000	000.	.002	.003
	σ	.7200+00	.1120+01	.6800+00	.6800+00	.6100+00	*6500+0n	.6500+00	.6500+00	.6300+0r	.6200+00	.6300+00	.6300+00	.6300+00	.6700+00	.7100+00	.6000+00	.5100+00	U0+0064.	.6300+00	.5300+00	.5200+0n	00+0049.	00+0069*	.6700+0n	.5600+00	.5500+0n	.6100+00	.6400+00	.6600+00	.6500+00	.6500+00	.6300+00	.6300+00
	U(PR.CM.)	.2861-01	.1234-01	.4034-01	.3589-01	.3808-01	.2868-01	.3649-01	.5186-01	.5091-01	.4424-01	.4028-01	.3856-01	.4851-01	.5096-01	.3037-01	.5982-01	.1243+00	.1017+00	.4351-01	.1217+00	.1246+00	10-7501.	.3303-01	.4489-01	.1032+00	.1033+00	.6364-01	.4690-01	.4569-01	.4279-01	10-4924.	.7448-01	.7480-01
	0.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		1.000	1.000	***	1.000	1.000	•	1.000	-	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-		***	1.000	1.000
	0.002	1.000	-	1.000	-	-	-	-	-	+-4	-	-	-	-	-	-	-	-	-	-	1.000		-	-	-	-		-	1.000	•	1.000	-	-	-
	0.005	1.000	-	-	*	-	-	1.000	-	400	•	•	***		•											-			-	-			1.000	-
	0.010	1.000	-	1.000	1.000	1.000	1.000	1.000	660.	666.		***	•											-			000		-	-	-	•	666.	Ċ
SSUPE	0.020	1.000	000	000				-		066.									.997		166.								. 999	0000	666.	666.	•	066.
id 37 ar	0.050	000						866.		•	•										260.					poe.				•		•	166.	
TMOSPIL	n.134	999	. 047	.007	. 997			760.																		. 96A	. 963	166.	566.	9995	366.	566.	266.	tho.
1.00 4	0.200		305					. 993																				. 088	060.			160.		
WAPUR	n.5u0	0.0	0	4	640.	.0.5	BHG.	400.	.078	074	. u78	0000	41/0	070	0.00	DHO.	000.	400.	.043	050.	750.	.036	. 935	300	. 97A	7.0.	740	.072	470°	.076	. 07B	. n7A	6000	pau.
LATER	1.000	2776	17.7	071	077	.070	.077	.071	Dian.	0,90	. 46.1	.967	Carso.	rabi.	040	. n7a	740.	663	.007	300	5000	* R53	.070	. 072	. 76.1	010.	010.	.951	.001	. 75R	. Or	.050	cho.	Can.
	2.001	4		7.00	1.00	176	. 5.00	1/710	476	. 0	.036	7.00	0.	. 6.0.			. 014	F. F. S. 12	· Bul	.0 5.	. D. S.H.	. A 36	.050	.051	. 5 5 5	1010	D'au.	.910	.014					. 944
	2000	41.7	4	000	305		0000		0.00		. ARRY,	. 0.03	ALTH.	A 1 7 X	. 46.1	10.	1080	7147.	2777	. 11 14.6	. 71.11	1171/2	, (80 °	100.	. h.75	755	.77.	4 11 2	F1173		. 13.9	021.		4117
						31.1		Blan	23.00			1.1.1.1	H. H.		. 73.3		. 7.		. 71	- Ken	Paris .		1 1	. 24,7		7		.7.		T. M. S.				. 17.
	8.	-			70.7	75.0		769		7.05	17.		-	11111			- Althou	11988	CK.17.	13.00				. 7/4.	7117	1	100	P. P. G. P.	. 72.	. 717	710			
	3.7.		+ 177.						1000	27 4																						1 1100		
				* Division			. 07/			* 11.4														days.	1	1		40.11.	4 100 15			337		

B-64



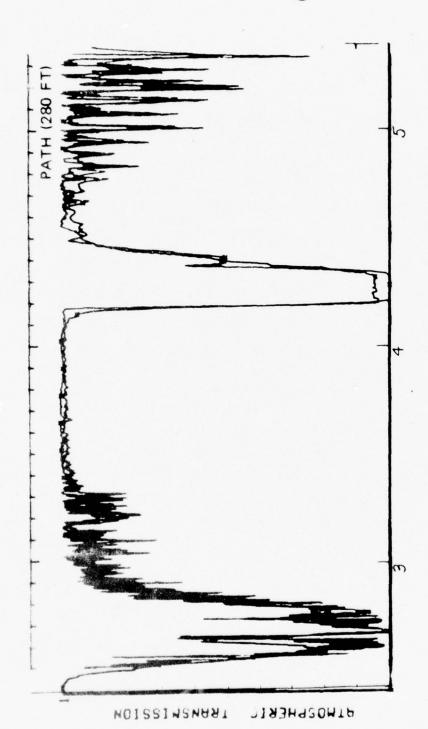
#### APPENDIX C

#### ATMOSPHERIC VALIDATION (GENERAL DYNAMICS)

In this section the results of a validation study described in Section 2-6 are presented. The original transmission curves were obtained by General Dynamics and described in a report for the U.S. Army Aviation System Command (AMCPM-IRCM), St. Louis, Missouri, titled "Infrared Signature Evaluation of a UH-1H Helicopter With and Without Radiation Suppression (June 1972).

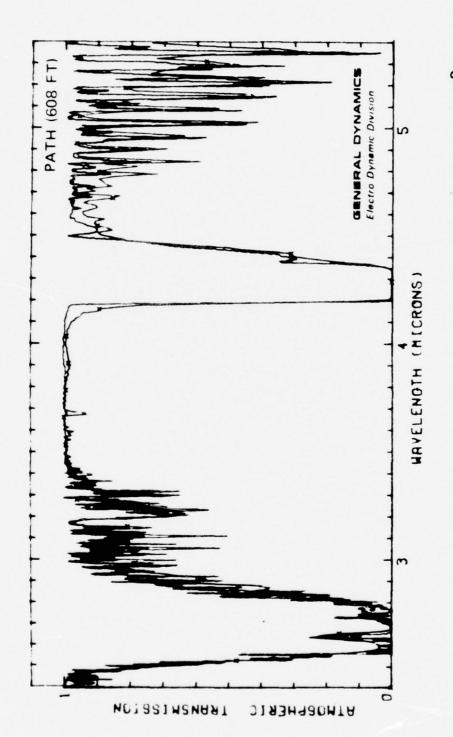
The "Hide" transmission model was plotted over these curves with a small "\*" every .3 inches for a direct comparison.





AIR TEMPERATURE: 42°F RELATIVE HUMIDITY: 27%

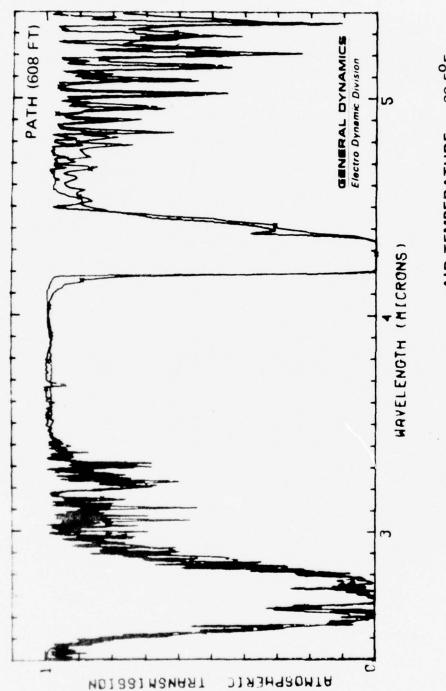
PRECIPITABLE H<sub>2</sub>O: .19 pr cm/km ATMOSPHERIC PATH: 280 FT ALTITUDE: 2281 FT



AIR TEMPERATURE: 53.5°F
RELATIVE HUMIDITY: 29%
PRECIPITABLE H<sub>2</sub>O: 31 pr cm/km
ATMOSPHERIC PATH: 608 FT

2281 FT

ALTITUDE:

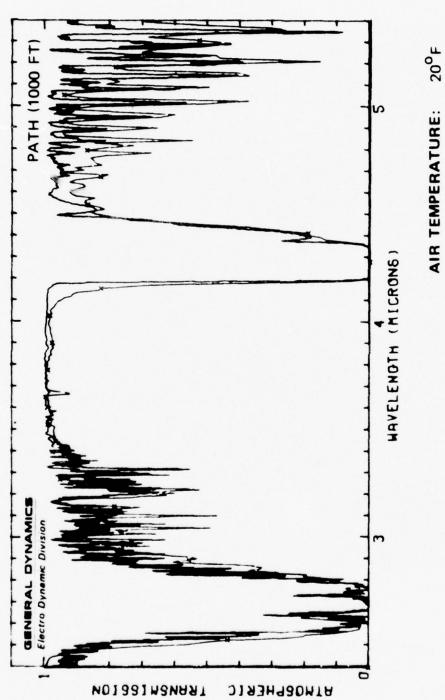


AIR TEMPERATURE: 39.5°F RELATIVE HUMIDITY: 39%

.25 pr cm/km

PRECIPITABLE H20:

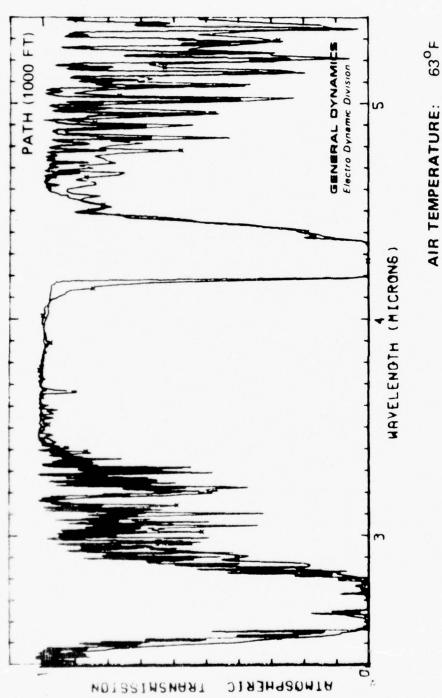
ATMOSPHERIC PATH: ALTITUDE: 2281 FT



.22 pr cm/km 74% RELATIVE HUMIDITY: PRECIPITABLE H<sub>2</sub>0: ATMOSPHERIC PATH:

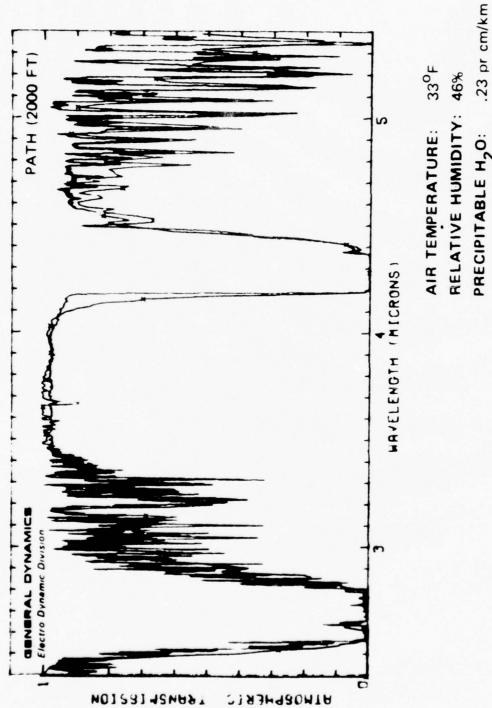
2281 FT ALTITUDE:

1000 FT



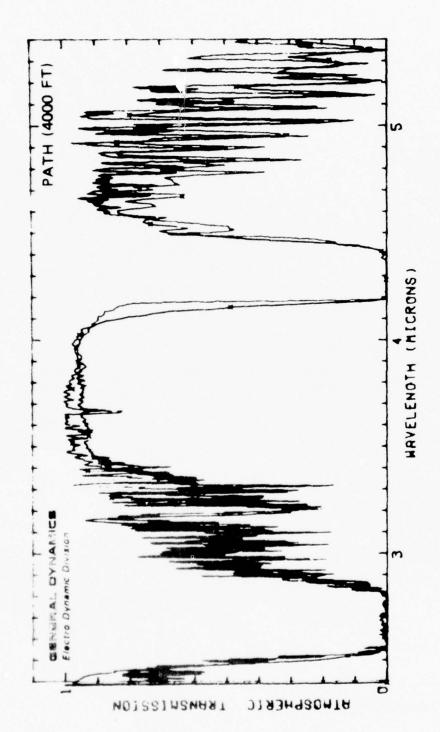
RELATIVE HUMIDITY: 32%
PRECIPITABLE H<sub>2</sub>O: .46 pr cm/km
ATMOSPHERIC PATH: 1,000 FT
ALTITIDE: 2281 FT





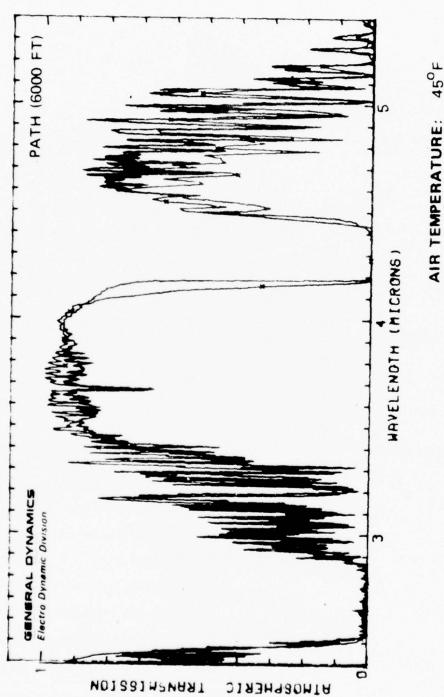
PRECIPITABLE H<sub>2</sub>O:
ATMOSPHERIC PATH:
ALTITUDE: 2281 FT

2000 FT



AIR TEMPERATURE: 44°F RELATIVE HUMIDITY: 33%

PRECIPITABLE H<sub>2</sub>O: .25 pr cm/km ATMOSPHERIC PATH: 4000 FT

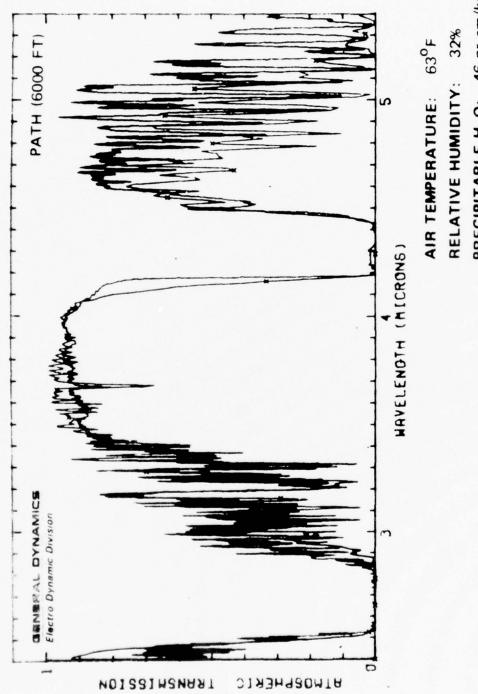


AIR TEMPERATURE: 45°F

RELATIVE HUMIDITY: 64%

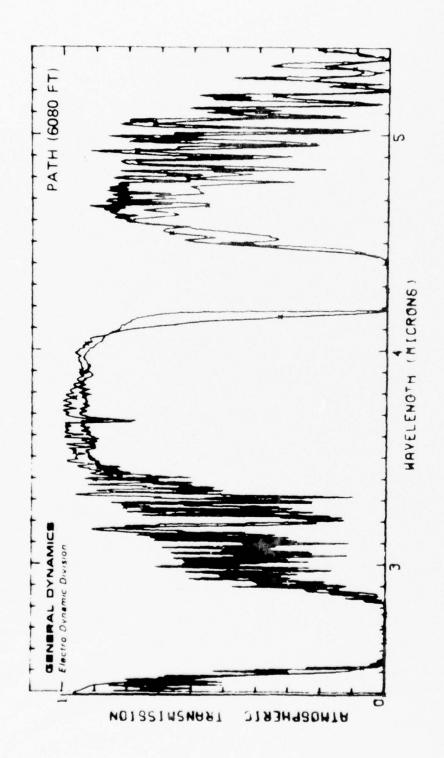
PRECIPITABLE H<sub>2</sub>O: .51 pr cm/km

ATMOSPHERIC PATH: 6000 FT



PRECIPITABLE H20: .46 pr cm/km 6000 FT ATMOSPHERIC PATH:





AIR TEMPERATURE: 41°F

RELATIVE HUMIDITY: 35%

PRECIPITABLE H<sub>2</sub>O: .24 pr cm/km

ATMOSPHERIC PATH: 6080 FT



#### APPENDIX D

#### YATES AND TAYLOR VALIDATION DATA

The data obtained experimentally by Yates and Taylor working for the Naval Research Laboratory in Washington is presented in this section overlayed with the Hide model prediction for validation purposes. The data was taken under seven different weather conditions and ranges from .5 $\mu$  to 13  $\mu$ . It is plotted in the following figures as a light smooth line. The Hide predictions are plotted as heavy dark lines with "x's" every .3 inches. With the exception of Plate #11, two graphs are presented on each page; one is plotted with the optimum scattering function discussed in Section 2.5 and one with the general scattering function also described in Section 2.5. This general function has the form:

$$T_s = EXP \left(-C \lambda^{-1}\right)$$

whereas the optimum takes the form

$$T_s = EXP (-A \lambda^{-B})$$

A,B,C are given under the measurement conditions for each plate.

D-1



Yates and Taylor Measurements Plate #5

Range (KM)       5.5       16.25         Alt (K ft)       S.L.       S.L.         Temp (°F)       38       53.         RH (%)       66       41.         H <sub>20</sub> (CM)       2.2       6.78         CO2 (CM)       176.       520.         N <sub>20</sub> (CM)       1.54       4.55         O <sub>3</sub> (CM)       .169       .498         General Scattering       .503       .681         Optimum Scattering A       .1026       .0402         B       .9020       .9982					
Temp (°F) 38 53.  RH (%) 66 41.  H <sub>20</sub> (CM) 2.2 6.78  CO2 (CM) 176. 520.  N <sub>20</sub> (CM) 1.54 4.55  O <sub>3</sub> (CM) .169 .498  General Scattering .503 .681  Optimum Scattering A .1026 .0402	Range (KM)		5.5	16.25	
RH (%)       66       41.         H <sub>20</sub> (CM)       2.2       6.78         CO2 (CM)       176.       520.         N <sub>20</sub> (CM)       1.54       4.55         O <sub>3</sub> (CM)       .169       .498         General Scattering       .503       .681         Optimum Scattering A       .1026       .0402	Alt (K ft)		S.L.	S.L.	
H <sub>20</sub> (CM) 2.2 6.78 CO2 (CM) 176. 520.  N <sub>20</sub> (CM) 1.54 4.55 O <sub>3</sub> (CM) .169 .498 General Scattering .503 .681 Optimum Scattering A .1026 .0402	Temp (°F)		38	53.	
CO2 (CM) 176. 520.  N <sub>2O</sub> (CM) 1.54 4.55  O <sub>3</sub> (CM) .169 .498  General Scattering .503 .681  Optimum Scattering A .1026 .0402	RH (%)		66	41.	
N <sub>20</sub> (CM)       1.54       4.55         O <sub>3</sub> (CM)       .169       .498         General Scattering       .503       .681         Optimum Scattering A       .1026       .0402	H <sub>20</sub> (CM)		2.2	6.78	
0 <sub>3</sub> (CM) .169 .498  General Scattering .503 .681  Optimum Scattering A .1026 .0402	CO2 (CM)		176.	520.	
General Scattering .503 .681 Optimum Scattering A .1026 .0402	N <sub>20</sub> (CM)		1.54	4.55	
Optimum Scattering A .1026 .0402	O <sub>3</sub> (CM)		.169	.498	
	General Scattering		.503	.681	
B .9020 .9982	Optimum Scattering	А	.1026	.0402	
		В	.9020	.9982	

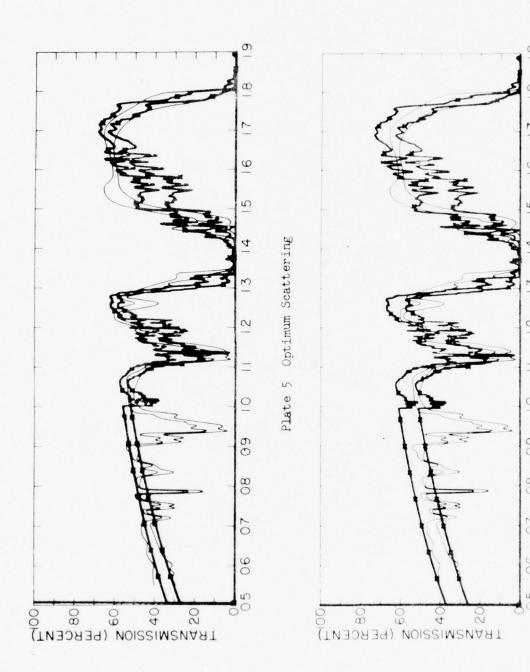


Plate 5 General Scattering

D-3
UNCLASSIFIED

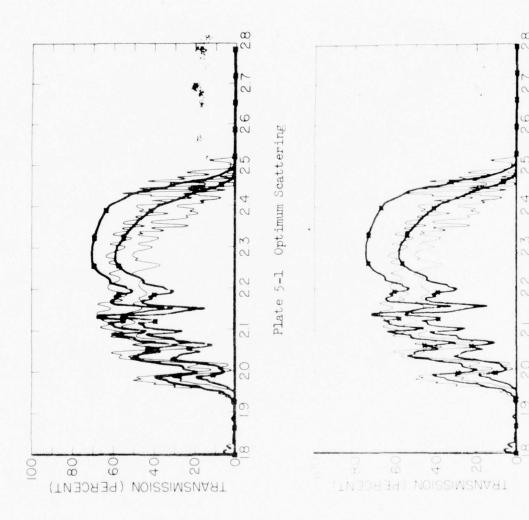


Plate 5-1 General Scattering

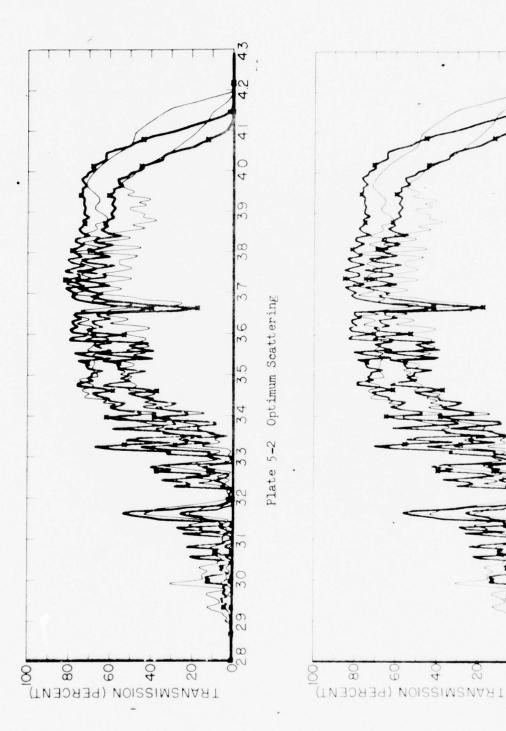
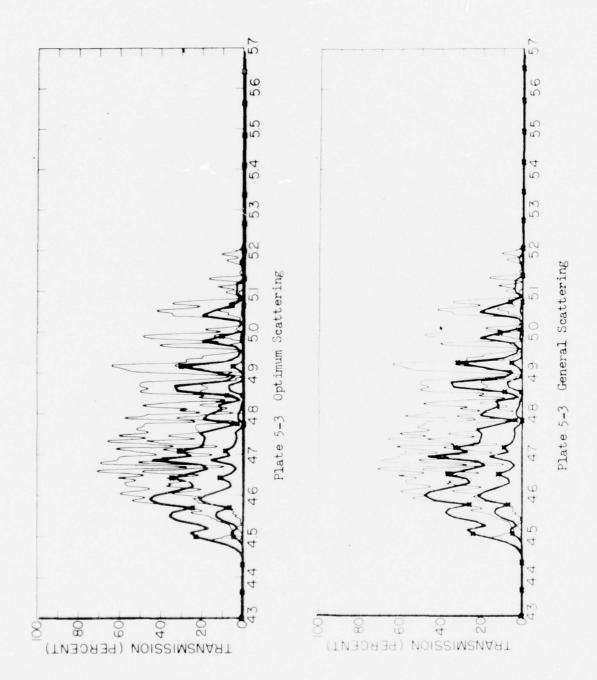
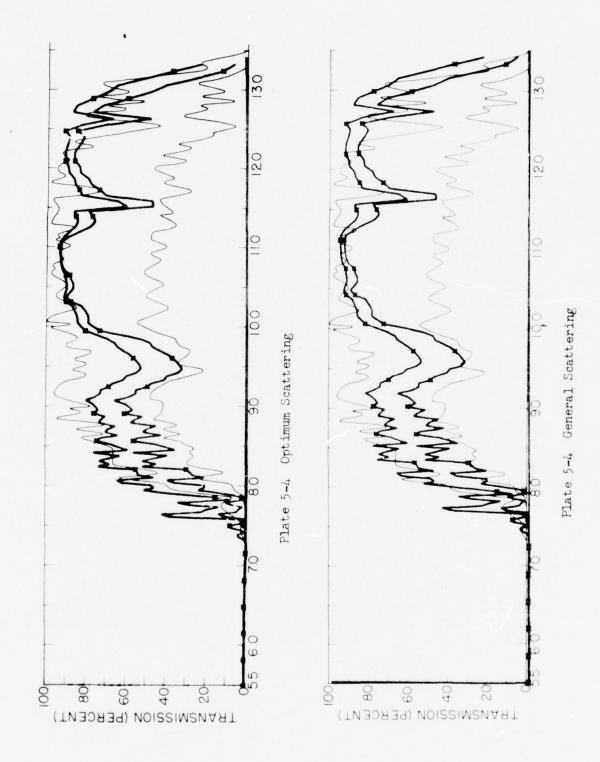


Plate 5-2 General Scattering



D-6

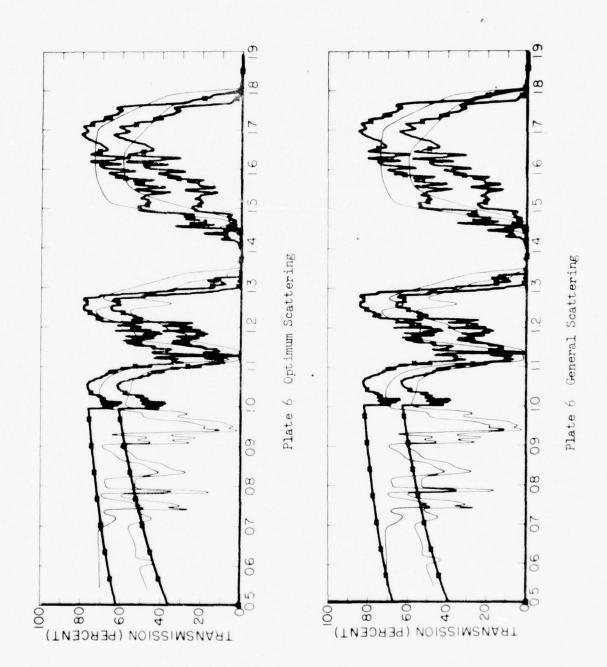


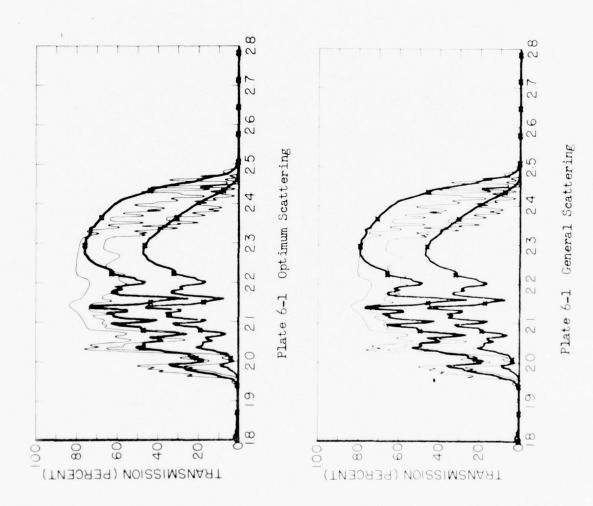
D-7

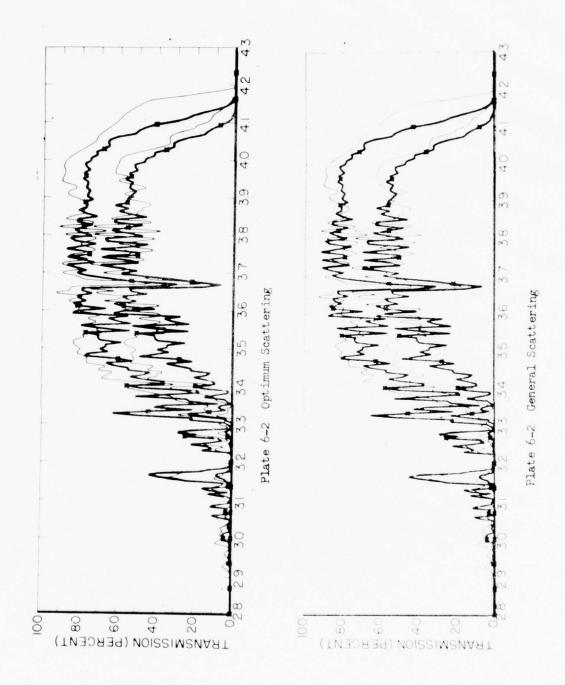


Yates & Taylor Measurements Plate #6

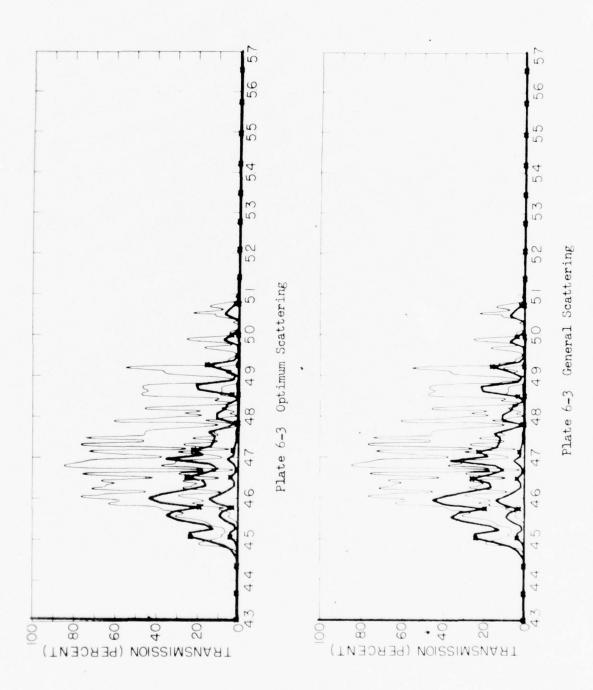
Range (KM)	5.5	16.25	
Alt (K ft)	S.L.	S.L.	
Temp (°F)	64.	68.	
Relative Humidity	51	43	
H <sub>20</sub> (Cm)	4.18	15.1	
CO2 (Cm)	176.	520.	
N <sub>20</sub> (Cm)	1.54	4.55	
O <sub>3</sub> (Cm)	.169	.498	
General Scattering	.196	.464	
Optimum Scatt A	.0476	.0298	
В	.8390	1.078	



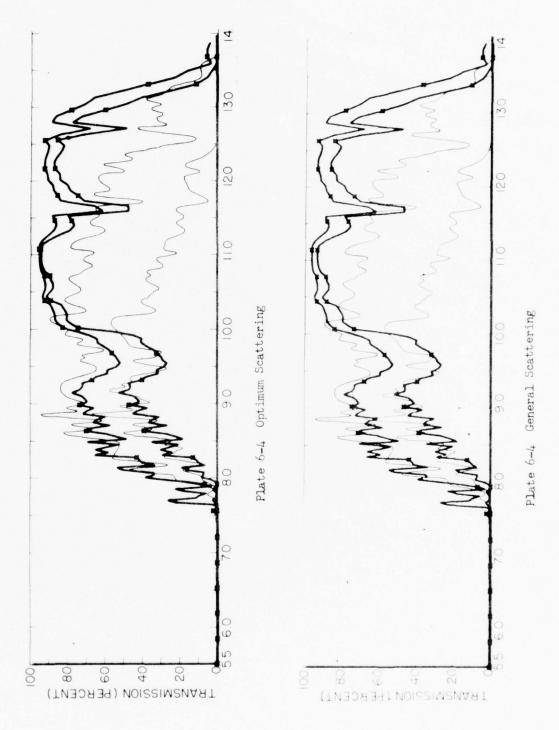




D-11
UNCLASSIFIED



D-12



D-13
UNCLASSIFIED



#### Yates and Taylor Measurements Plate #7

Range (KM)	5.5	16.25	
Altitude (K ft)	S.I.	S.L.	
Temp (°F)	78	74	
Relative Humidity	73	82	
H20 (CM)	9.4	27.7	
CO2 (CM)	176	520	
N <sub>20</sub> (CM)	1.54	4.55	
O <sub>3</sub> (CM)	.169	.498	
General Scattering	.662	1.27	
Optimum Scattering A	.0881	.0600	
В	1.558	1.436	

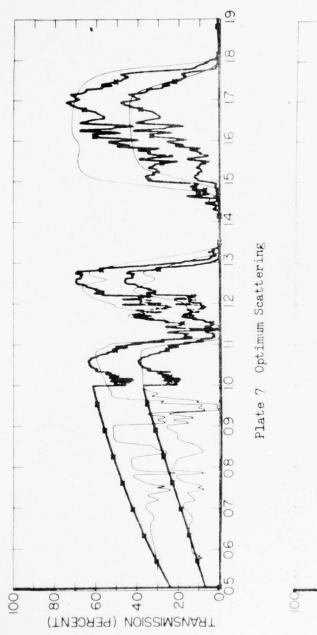
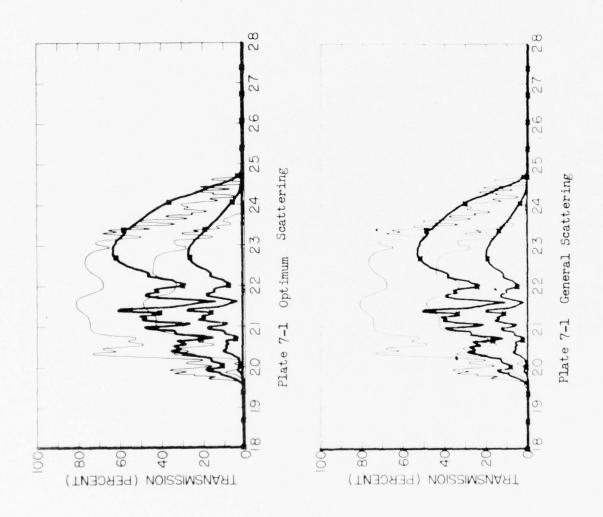
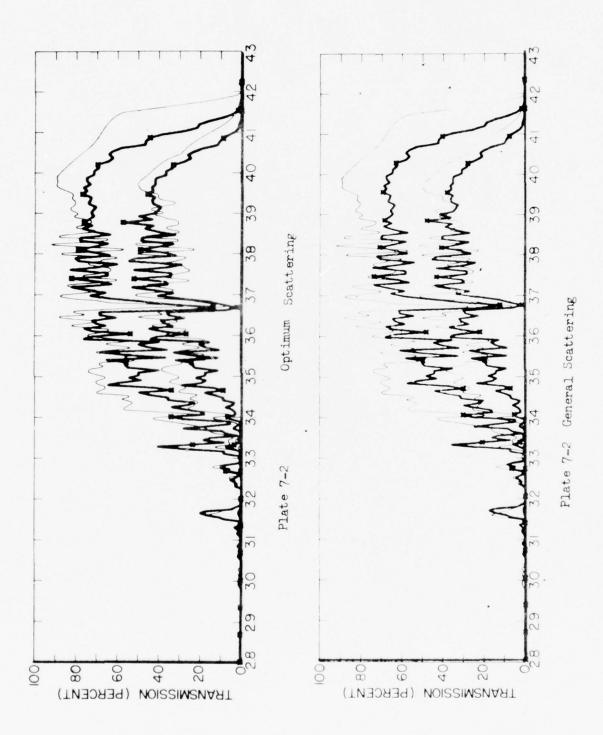


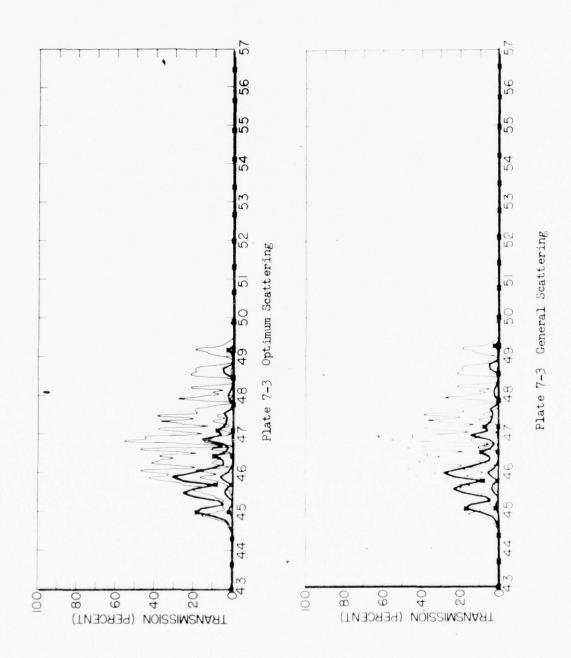


Plate 7 General Scattering

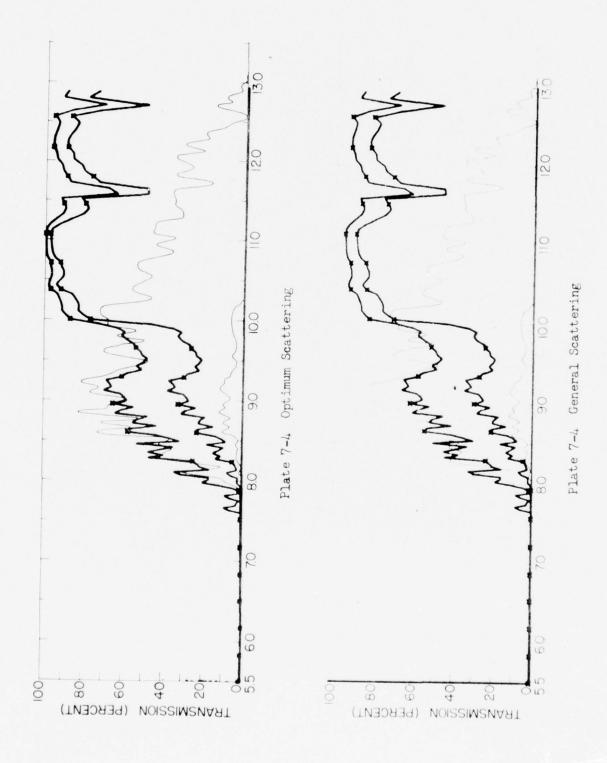




D-17
UNCLASSIFIED



D-18
UNCLASSIFIED

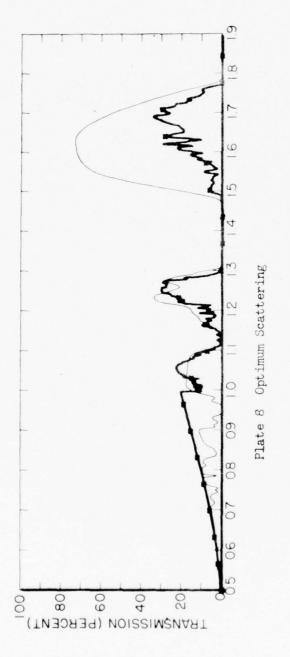


D-19



Yates & Taylor Measurements Plate #8

Range (KM)		16.25
Altitude (K ft)		S.L.
Temp (°F)		87.
Relative Humidity		59.
H2O (CM)		37.
CO2 (CM)		520
N20 (CM)		4.55
03 (CM)		.498
General Scattering		2.15
Optimum Scattering	A	.096
	В	1.610
	В	1.610



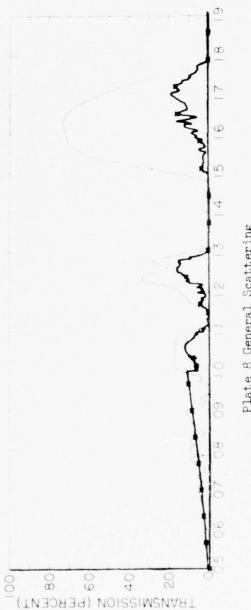
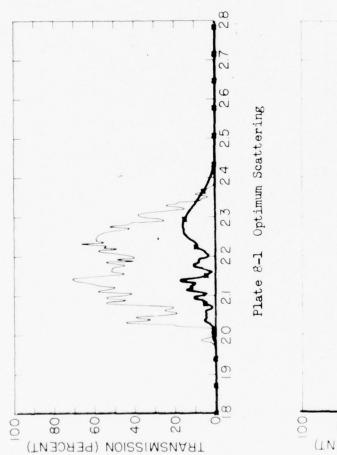


Plate 8 General Scattering



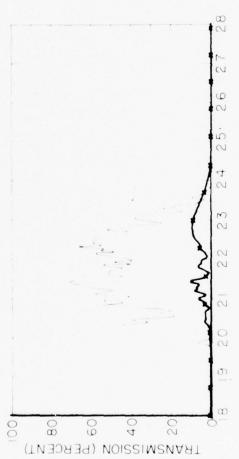
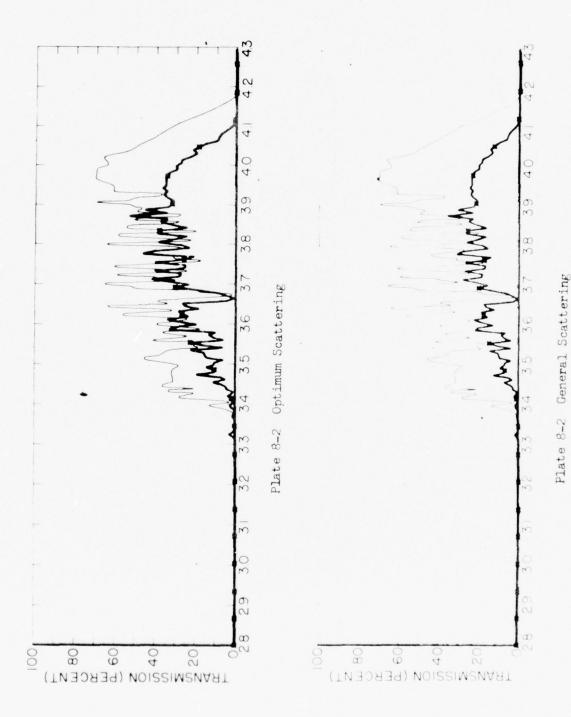
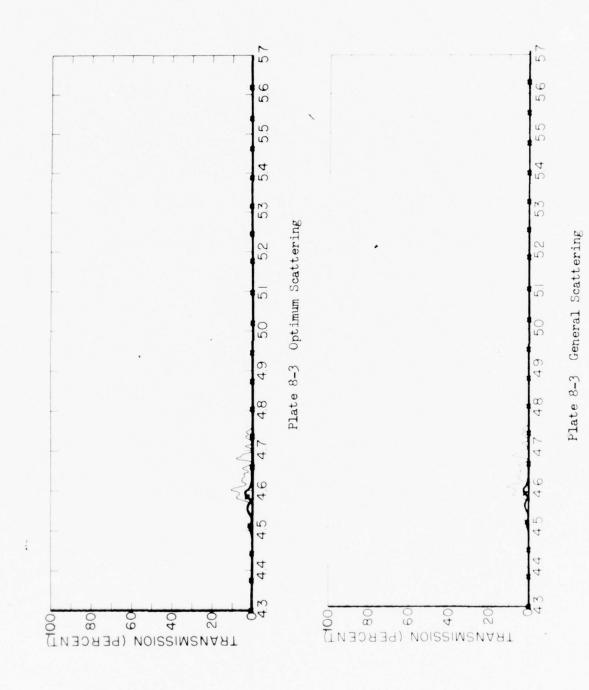


Plate 8-1 General Scattering





D-24

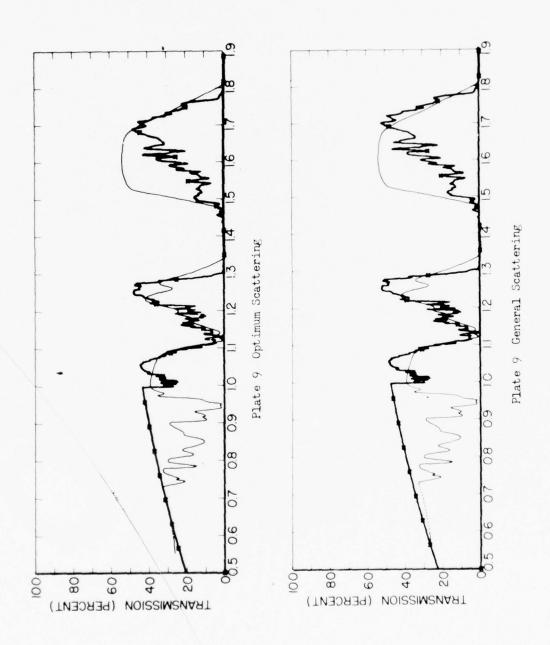
#### UNCLASSIFIED



#### Yates and Taylor Measurements Plate #9

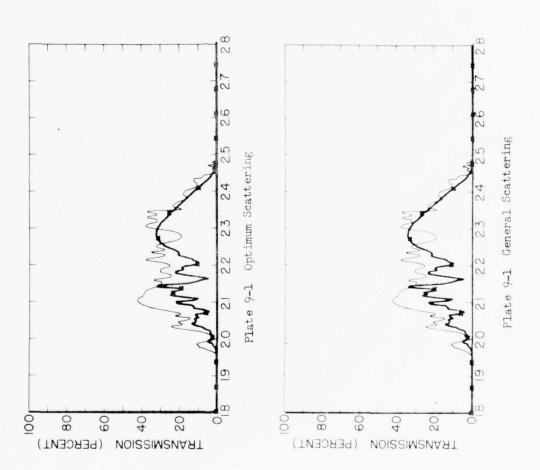
Range (KM)	27.7
Altitude	10 KM
Temp (°F)	43
Relative Humidity	100
H2O (CM)	20
CO2 (CM)	413.2
N20 (CM)	3.62
03 (CM)	. 849
General Scattering	.73
Optimum Scattering A	.03
В	.9146

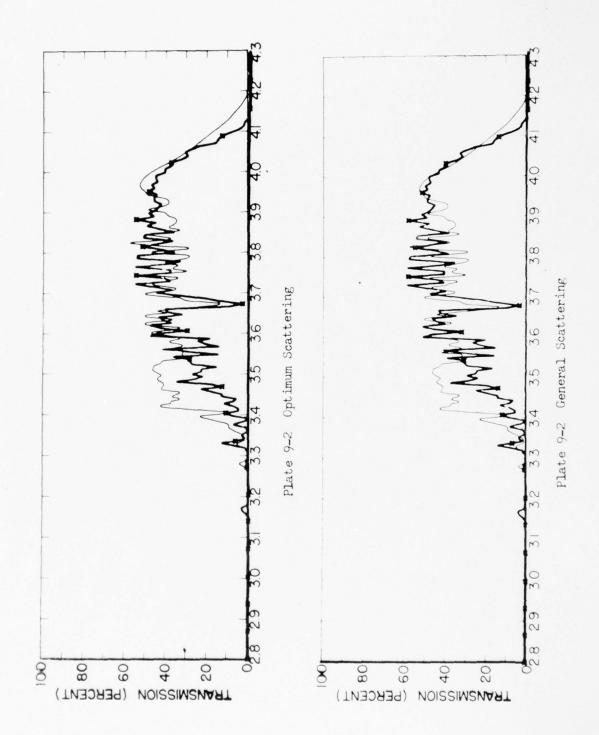




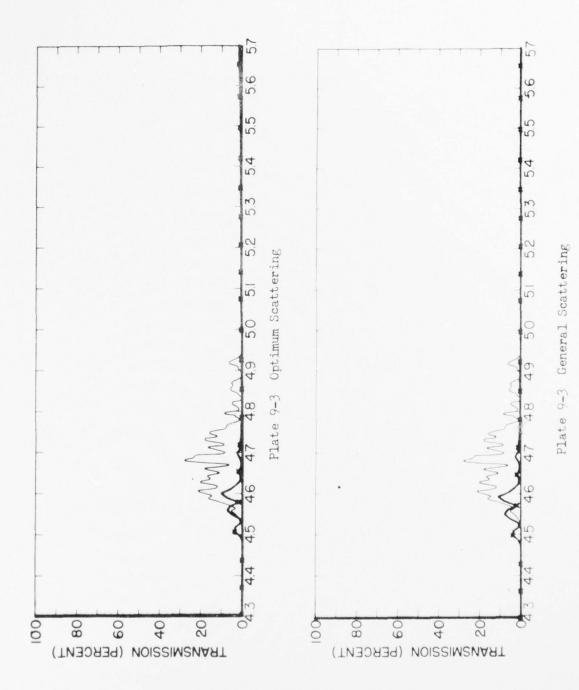
D-26

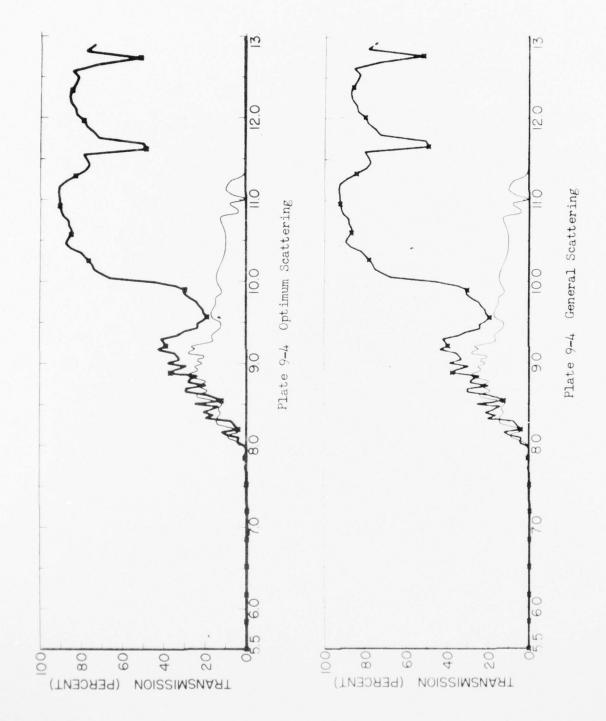






D-28

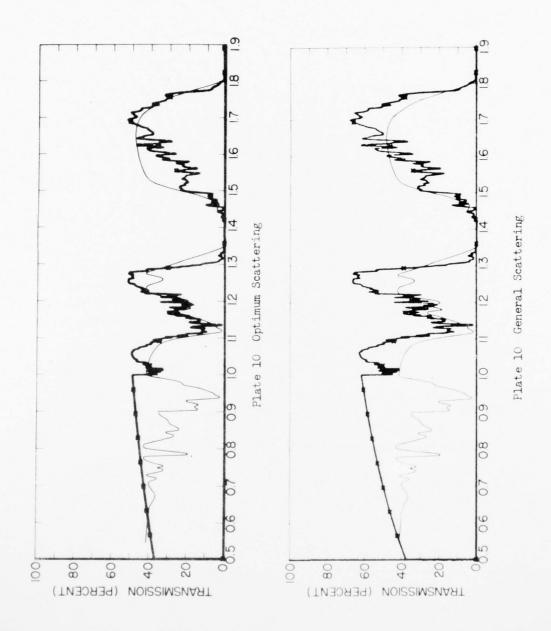




### Yates and Taylor Measurements Plate #10

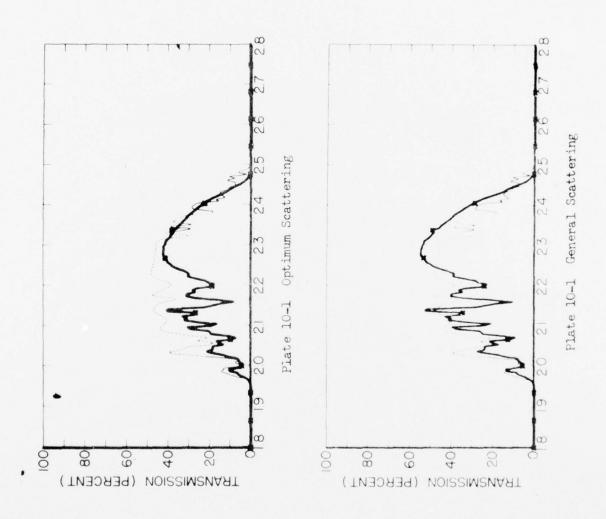
Range (KM)		10
Altitude (KM)		27.7
Temp (°F)		
Relative Humidity		
H2O (CM)		10.5
CO2 (CM)		413.7
N20 (CM)		3.62
03 (CM)		.849
General Scattering		.49
Optimum Scattering	A	.0258
	В	.4750

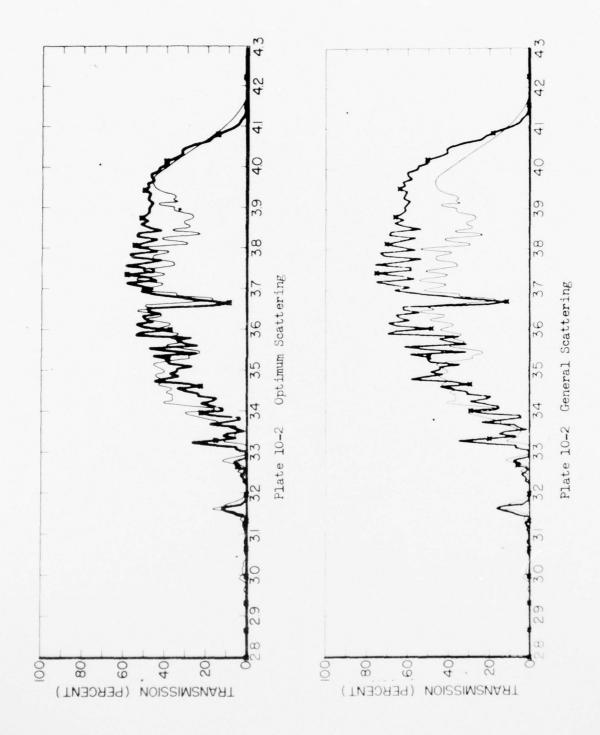




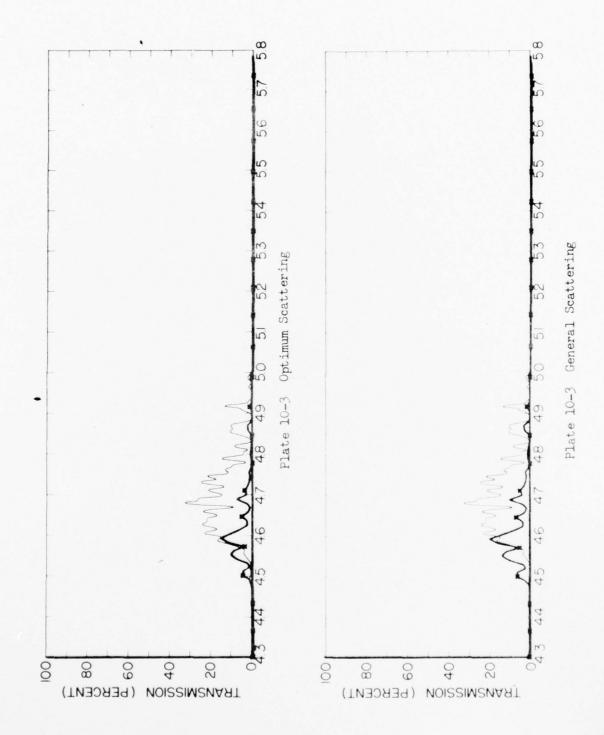
D-32

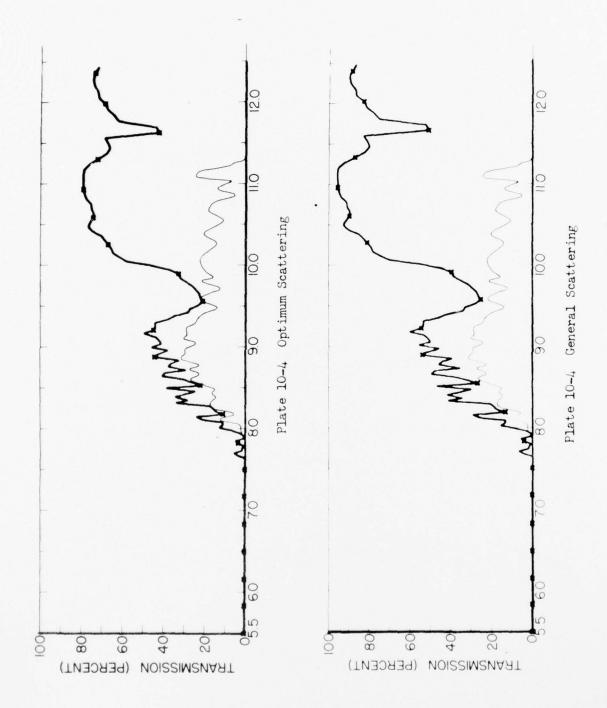






D-34



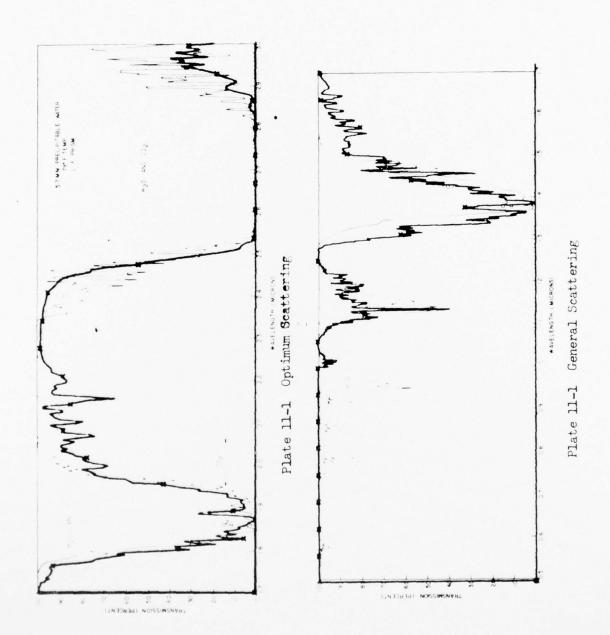


D-36



### Yates and Taylor Measurements Plate #11

Range (KM)		.3
Altitude (K ft)		S.L.
Temp ( <sup>O</sup> F)		
Relative Humidity		-
H2O (CM)		.57
CO2 (CM)		9.
N20 (CM)		.084
03 (CM)		.009
General Scattering		0
Optimum Scattering	A	No Scattering
	В	Range too small



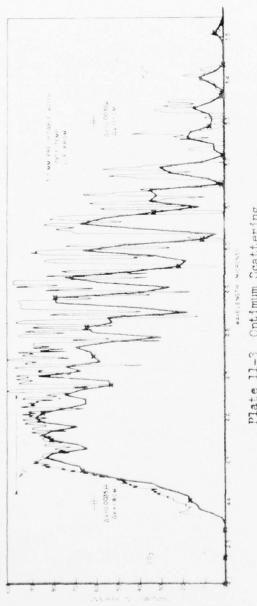


Plate 11-3 Optimum Scattering

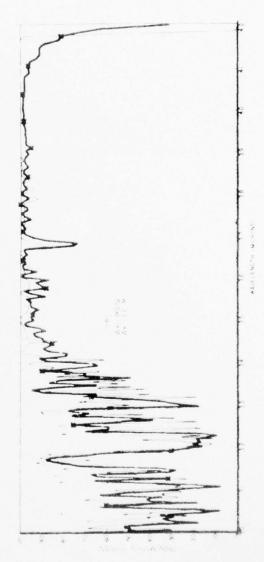
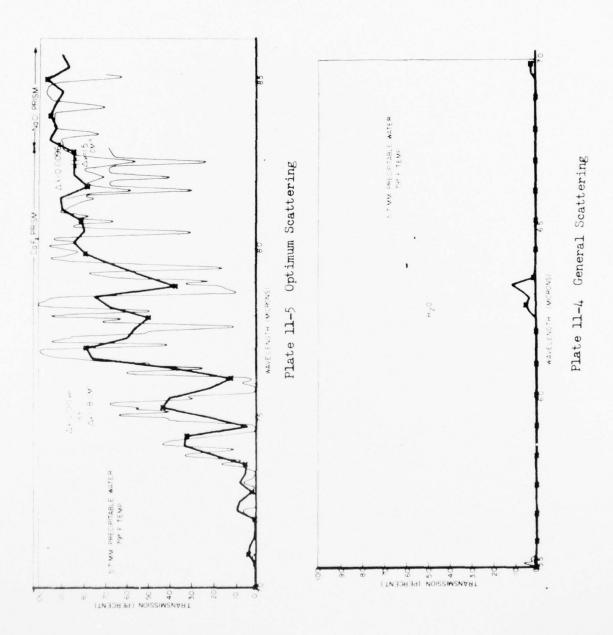
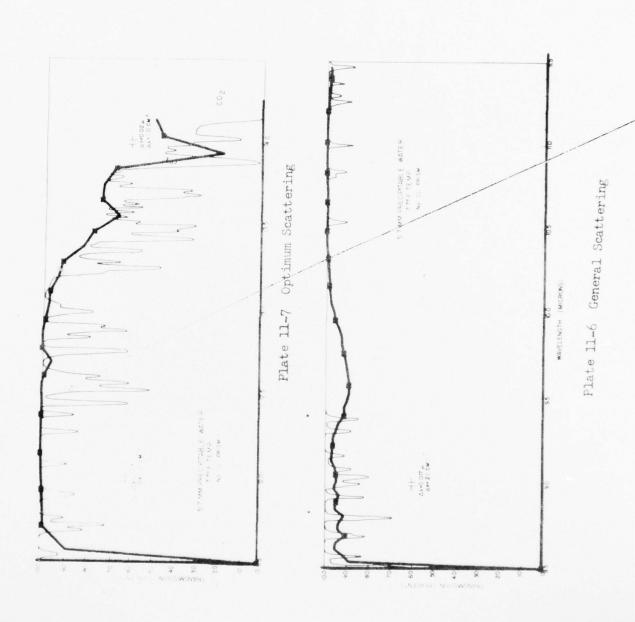


Plate 11-2 General Scattering



D-40



D-41



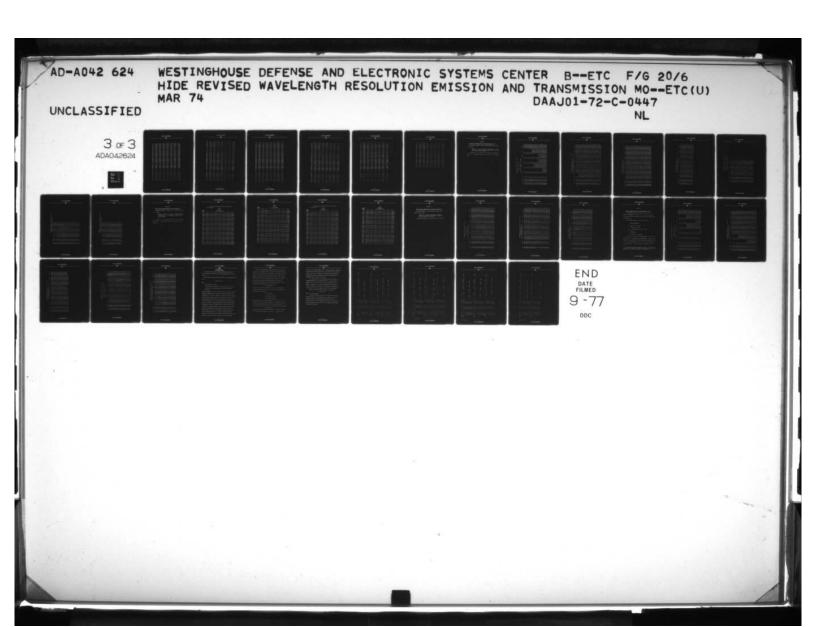
#### APPENDIX E

# Hot water vapor Emission Data for the Range 50 cm-1 9300 cm-1.

This appendix presents the Hot water Emission Data as given in this report:

C. B. Ludwig, Measurements of the Curves of Growth of Hot Water Vapor, Applied Optics, May 1971, Vol. 10. No. 5.

The data is given as a function of temperature and wavenumber in tabular form. The equations utilizing this data are given Section 3.4.





m <sup>-1</sup> . 300 K 600 K 50. 0.950E 00 0.103E 00				k (per cm at ST	• /				
m-1	300 K	600 K	1000 K	1500 K	2000 K	2500 K	2000 K		
50.	0.950E 00	0.103E 00	0.420E-01	0.114E-01	0.450E-02	0.300E-02	0.190E-0		
75.	0.20SE 01	0.065E 00	0.113E 00	0.375E-01	0.195E-01	0.134E-01	0 670E-0		
100.	0.356E 01	-0.990E 00	0.300E 00	0.104E 00	0 577E-01	0.365E-01	0.211E-0		
125.	0.650E 01	0.201E 01	0.650E 00	0.214E 00	0.12SE 00	0.545F-01	0.529E-0		
150	0.825E 01	0.325E 01	0.121E 01	0.415E 00	0.260E 00	0.168F.00	0 109E 0		
175.	0.570E 01	0.452E 01	0.189E 01	0.765E 00	0.450E 00	0.2891.00	0.193E 0		
200.	0 810E 01	0.540E 01	0.261E 01	0 126E 01	0.695E 00	0.4601.00	0.309E 0		
225.	0.652E 01	0.600E 01	0.337E 01	0.179E 01	0.101E 01	0.679E 00	0.454E 0		
250.	0.493E 01	0.622E 01	0.407E 01	0.230E 01	0.135E 01	0.935E 00	0.620E 0		
275.	0.316E 01	0.592E 01	0.456E 01	0.251E 01	0.172E 01	0.122E 01	0.822E 0		
300.	0.199E 01	0.528E 01	0.479E 01	0.32×E 01	0.213E 01	0.149F.01	0 191E 0		
225.	0.113E 01	0.450E 01	0.484E 01	0.361E 01	0 249E 01	0.1791.01	0.128E 0		
350.	0.585E 00	0.370E 01	0.471E 01	0.353E 01	0.284E 01	0.20SE 01	0.154E 0		
75.	0.293E 00	G. 289E 01	0.443E 01	0.394E 01	0.312E 01	0.237E.01	0.152E 0		
100.	0.13SE 00	0.205E 01	0.400E 01	0.396E 01	0.330E 01	0.260E 01	0.207E 0		
125.	0.620E-01	0.143E 01	0.347E 01	0.388E 01	0.341E 01	0.280E 01	0.229E 0		
50.	0.255E-01	0.950E 00	0.2021: 01	0.370E 01	0 345E 01	0.295E 01	0.24SE 0		
75.	0.940E-02	0.610E 00	0.236E 01	0.313E 01	0.342E 01	0.304E 01	0.262E 0		
<b>.00</b> .	0.340E-02	0.386E 00	0.185E 01	0.310E 01	0.334E 01	0.309E 01	0.273E 0		
25.	0.105E-02	0.236E 00	0.145E 01	0.274E 01	0.319E 01	0.307E.01	0.280E 0		
550.	0.350E-03	0.144E 00	0.110E 01	0.23SE 01	0.300E 01	0.301E 01	0.283E 0		
575.	0.1261-03	0.S20E-01	0 81SE 00	0.204E 01	0.276E 01	0.259E 01	0.282E 0		
500.	0.430E-04	0.445E-01	0.598E 00	0.174E 01	0.248E 01	0.2751.01	0 277E 0		
25.	0.150E-04	0.242E-01	0.427E 00	0.145E 01	0.222E 01	0.260E 01	0.269E 0		
50.	0.510E-05	0.127E-01	0.294E 00	0.118E 01	0.195E 01	0.241E 01	0.258E 0		
575.	0.170E-05	0.630E-02	0.200E 00	0.250E 00	0.169E 01	0.221E 01	0.245E 0		
780.	0.570E-06	0.300E-02	0.134E 00	0.74SE 00	0.146E 01	0.200E 01	0.229E 0		
25.	0.195E-06	0.140E-02	0.902E-01	0.5SOE 00	0.124E 01	0.178E 01	0.213E 0		
30.	0.650E-07	0.620E-03	0.590E-01	0.413E 00	0.103E 01	0.15GE 01	0.196E 0		
75.		0.020E-03	0.450E-01	0.330E 00	0.545E 00	0.136E 01	0.177E U		
	0.385E-07	0.110E-03	0.355E-01	0.242E 00	0 695E 00	0.117E 01	0.159E 0		
00.	0.670E-07	0.500E-04	0.289E-01	0.174E 00	0 560E 00	0.10GL 01	0.143E 0		
25. 30.	0.113E-06	0.230E-04	0.245E-01	0.123E 00	0.450E 00	0.855E 00	0.126E 0		
	0.195E-06			0.123E 00	0.457E 00	0.71SE 90	0.111E 0		
75.	0.32SE-06	0.103E-04	0.214E-01		0.278E 00	0.595E 00	0.955E 0		
100.	0.560E-06	0.460E-05	0.159E-01	0.830E-01	0.239E 00	0.492E 00	0.825E 0		
25	0.950E-06	0.205E-05	0.174E-01	0.730E-01 0.665E-01	0.235E 00	0.405E 00	0.705E 0		
50.	0.160E-05	0.140F-05	0.166E-01			0.352E 00	0.600E 0		
75.	0.275E-05	0.350E-05	0.165E-01	0.630E-01	0.195E 00	0.332E 00 0.312E 00	0.500E 0		
00.	0.470E-05	0.850E-05	0.167E-01	0,620E-01	0.190E 00 0.191E 00	0.312E 00 0.289E 00	0.425E 0		
25.	0.810E-05	0.215E-04	0.175E-01	0 630E-01	0.191E.00	0.251E 00	0.35×E 0		
50.	0.13615-04	0.570E-04	0.188E-01	0.675E-01 0.745E-01	0 2021, 00	0.251E.00	0.337E 0		
75.	0.23512-04	0.150E-03	0.20×E-01						
00.	0.4000-01	0.38/11/93	0.243E-01	0 SGE-01 0 122E 00	0 228E 69 0 266E 00	0.313L (0) 0.380L (0)	0 449E 0		
25.	0.6×0E-04	0.950E-03	0.268E-01		0.3851.00	0.380L (a)	0.4498.0		
50.	0.12013-03	0.245E=2	0.315E-01	0.176F-90		0.4611.00	1 3001.0		
75.	0.20015-03	0.6201.02	0.038E-01	0.2511:00	0 4111.00				
00	0.365E-03	0.118E-01	0.10712.00	0.3301.00	0.458E 00	0.542E =0	0.641.0		
25.	0.650E-03	0.330E-01	0.166E 00	0.405E 00	0.4871:00	0.5711.00	0.002E 0		
50.	0.130F02	0.635E-01	0.214E 00	0.45eL 00	0 535E 00	0.557E 00	0.637E 0		
75.	0.2506-02	0.12 E 00	0.311E 00	0.4771.00	0 5021:00	0.562E 90	n nosti n		
00.	0.500E-02	0.212E 00	0.407E 00	0.547E 00	0.551E 00	0.514E 00	0.578E 0		
25.	0.103E-01	0.255E 00	0.459E 00	0.502E 00	0.4971.00	0.4861, 00	0.551E0		
.0.	0.219E-01	0.3285.00	0.491E 00	0.5581.00	0.4×01,00	0.4851.00	0 A37E 0		
75.	0.485E-01	0.31515.00	0.505E 00	0.5211:00	0 47712 60	0.4×4E.00	0.520E 0		
00.	0.114E 00	0.36417(0)	0.53×15.00	0.563E 60	0.7031700	0 502E (a)	0.516E 0		
27.	0.249E 00	0.4601,00	0 621E 00	0.621E.00	0. 53815.00	0.53×1.00	0.5141; 0		
50.	0.3971; 00	0.569E.00	0.7491; 00	0.76×1, 00	0 /×1E 00	0.56.1 (6)	0.51817.0		
75.	0.41×E 00	0.6271, (0)	0 8211,00	0. < (91. 90	0.640E 00	0.5911.00	0.3000.0		
00.	0.10×F 01	0.125E 01	0.1136.01	0.940(.00	0.5071:00	0.6631 03	0.525E 0		
25.	0.165E 01	0.1552.01	0.118E 01	0.6701:00	0.562E 00	0.45(1.00)	0 430E 9		
50.	0.100001	0.675E 00	0.557F 00	0.3498.00	0.276E 00	0 2631 69	0 277E 0		
						0.155E CA	0 173E 0		



1600.	0.60315-01	0.53815-01	0.86315-01	0.11215.00	0.1201/.00	0.12515.00	0.12512.00
1625.	0.501E 00	0.252E 00	0.118E 00	0.112E 00	0.1311:00	0.1102.00	0 1101 00
1650.	0.730E 00	0.430E 00	0.237E 00	0.191E 00	0.171E.00	0.1701:00	0.1701.00
1675.	0.1491:01	0 200 E 00	0.2941:00	0.2381:00	0.2101,140	0.2011; (a)	0.2921:00
1700.	0.100E 01	0.553E 00	0.434E 00	0.3107.00	0.2601.00	0.220E 00	0.17512 00
1725.	0 8021, 00	0.6581,00	0.528E 00	0.411E 00	0.2001.00	0.210E.00	0.1911.00
1750.	0.580E 00	0.527E 00	0.460E 00	0.37 sE 00	0.322E 00	0.2541.00	0.2401.00
1775.	0.330E 00	0.400E 00	<b>0</b> .430E 00	0.356E 00	0.318E 60	0.27011.09	0.2261.00
1500.	0.250E 00	0.393E 00	0.405E.00	0.342E 00	0.501E 00	0.275E.00	0.242E 00
1825.	0.147E 00 0.910E-01	0.219E 00 0.272E 00	0.313E 00 0.298E 00	0.318E 00 0.295E 00	0.291E 00 0.269E 00	0.268E 00 0.253E 00	0.250E 00 0.247E 00
1850. 1875.	0.51012-01	0.23E 00	0.214E 00	0.211E 00	0.2141:00	0.2451.00	0.21×E 00
1900.	0.37012-01	0.115E 00	0.184E 00	0.211E.00	0.2141.00	0.2181.00	0 222E 00
1925.	0.241E-01	0.1151.00	0.1561.00	0.188E 00	0.4951:00	0.2001.00	0.2041.00
1950	0.162E-01	0.606E-01	0.976E-01	0.141E.00	0.1661.00	0.179E 00	0.1× E 00
1975.	0.112E-01	0.4251-01	0 SmstE-01	0.155E 00	0.1481.00	0.1565.00	0.166E 00
2000.	0.780E-02	0 400E-01	0.765E-01	0.1121/.00	U 120F 00	0.157E 50	0.1475.00
2025.	0.540E-02	0.352E-01	0.647E-01	0.876E-01	0.1161:00	0.1151.00	0.1295.00
2050.	0.3NOE-02	0.252E-01	0.507E-01	0.705E-01	0.8881-01	0.10E.00	0 111E 00
2075.	0.260E-02	0.179E-01	0.377E-01	0 546E-01	0.72415-01	0.82515-01	0.0001-01
2100.	0.180E-02	0.123E-01	0.294E-01	0.443E-01	0.60×E-01	0.6561.01	-0.840E-01
2125.	0.127E-02	0.850E-02	6 212E-01	0.37×E-01	0.579E-01	0.610E-01	0.725E-01
21.50.	0.850E-03	0.650E-02	0.152E-01	0 275E-01	0 4191-01	0.521E-01	0.62×E-01
2175.	0.620E-03	0.400E-02	0.107E-01	0.214E-01	0.374E-01	0.47FE-01	0.500E-01
2200. 2225.	0.450E-03 0.405E-03	0.298E-02 0.175E-02	0.931E-02 0.696E-02	0.159E-01 0.152E-01	0.329E-01 0.295E-01	0.463E-01 0.365E-01	0.455E-01 0.395E-01
2250.	0.321E-03	0.173E-02 0.120E-02	0.452E-02	0.101E-01	0.252E-01	0.331E-01	0.350E-01
2275	0 229E-03	0.721E-03	0.364E-02	0.930E-02	0.225E-01	0.305E-01	0.312E-01
2300.	0.195F-03	0.544E-03	0.3181-02	0.750E-02	0.20215-01	0.28112-01	0 290E-01
2325.	0.154E-03	0.375E-03	0.185E-02	0.603E-02	0.175E-01	0.2091-01	0 275E-01
23.0.	0.101E-03	0.263E-03	0.119E-02	0.4S0E-02	0.15CE-01	0.2555.01	0 267E-01
2375.	0.852E-04	0.185E-03	0.909E-03	0.360E-02	0 133E-01	0.241E-01	0.25912-01
2400.	0.763E-04	0.137E-03	0.711E-03	0.316E-02	0.122E-01	0.237E-01	0.252E-01
2425.	0.615E-04	0.126E-03	0.610E-03	0.257E-02	0.101E-01	0.21SE-01	0.251E-01
2430.	0.450E-04	0.113E-03	0.518E-03	0.201E-02	0.920E-02	0.200E-01	0.249E-01
2475	0.372E-04	0.10612-03	0.435E-03	0.168E-02	0.755E-02	0.183E-01	0.247E-01
2500.	0.355E-04	0.101E-03	0.376E-03	0.168E-02	0.669E-02	0.166F-01	0.248E-01
2525. 2550.	0.35SE-04 0.35SE-04	0.990E-01 0.102E-03	0.366E-03 0.376E-03	0.167E-02 0.167E-02	0.651E-02 0.641E-02	0.156L-01 0.152E-01	0.249E-01 0.251E-01
2575.	0.422E-04	0.105E-03	0.373E-03	0.168E-02	0.656E-02	0.150E-01	0 253E-01
2600.	0.521E-04	0.111E-03	0.371E-03	0.170E-02	0.673E-02	0.15212-01	0.25-E-01
2625.	0.646E-04	0.121E-03	0.384E-03	0.179E-02	0.798E-02	0.179E-01	0.263E-01
2650	0.742E-04	0.129E-03	0.479E-03	0.2011:-02	0 7×SE-02	0 17.7E-01	0.270E-01
2675.	0.953E-04	0.165E-03	0.544E-03	0.249E-02	0.945E-02	0.26 (L-01	0.250E-01
2700.	0.101E-03	0.190E-03	0.761E-03	0.324E-02	0.106E-01	0.231E-01	0.295E-01
2725.	0.147E-03	0.272E-03	0.892E-03	0.441E-02	0.125E-01	0.257E-01	0.318E-01
2750.	0.195E-03	0.326E-03	0 100E-02	0.499E-02	0.147E-01	0.295E-01	0.343E-01
2775	0.261E-03	0.421E-03	0.145E-02	0.568E-02	0.161E-01	0.3067-01	0.37SE-01
2500.	0.205E-03	0.515E-03	0.19512-02	0.75112-02	0.1531-01	(1.56355-01	0.417E-01
2825. 2550.	0.362E-03 0.507E-03	0.550E-03	0 237F-02 0 274F-02	0 850E-02 0 855E-02	0.2555.61	0 173F-01 0 171E-01	0 470E-01 0 0E-01
2875	0.799E-03	0.1181.00	0 32215-02	0 110E-01	0.2125.01	0.431E-01	0 T0E-01
2900.	0.935E-03	0.160E-02	0.38012-02	0.126E-01	0.2001001	0.750F.01	0 PE-01
2925.	0.10SE-02	0.20117-02	0.451E-02	0.14012-01	0.30615.01	0.7301.01	0.00312-01
2950.	0.192E-02	0.271E-02	0.565E-02	0.159E-01	0.3775-01	0.6241-01	0.735E-01
2975.	0.263E-02	0.300E-02	0.625E-02	0.179E-01	0.3×5E-01	0 666101	0.501E-01
3000.	0.295E-02	0.330E-02	0.701F-02	0.203E-01	0.460E-01	0.782E-01	0.55E-01
3025.	0.310E-02	0.370E-02	0.846E-02	0.220E-01	0.519E-01	0.8001.01	0.970E-01
3050.	0.349E-02	0.400E-02	0.969E-02	0.279E-01	0 60217-01	0.1095.60	0.106E 00
3075.	0.730E-02	0.450F202	0 IIIE-01	0 272E-01	0 676E-01	0.10eE e0	0.117E 00
3100.	0.9001,-02	0.450E-02	0.1371-01	0.372E-01	0.564E-01	0.15(E.00	0.129E (1)
3125.	0.10012-02	0.510E-02	0.162E-01	0.471E-01	0.100E:00	0.1121.50	6 145E C.
3150. 3175.	0 610E-03	0.550E-02	0.20515-01	0.5005-01	0.1221,00	0. Lest, (6)	0 155E 5
3175.	0.160E-02 0.330E-02	0.600E-02	0.247E-01 0.253L-01	0.63.E-01 0.770E-01	0.1331.00	0.177E 09 0.183E 00	0 150E C
3225.	0.3.0E-02	0.700E-02	0.376E-01	0.770E-01 0.914E-01	0.1661.00	0.1834.00	0 187E C
3250.	0.410E-02	0.103E-01	0.514E-01	0.117E 00	0.1941.00	9.22sE 00	0.220E ( -
			0			STREET OF THE	W-madde to



3275.	0.290E-02	0.129E-01	0.66412-01	0.1171:00	0.2201:00	0.254E 00	0.2111.00
2300.	0.220E-02	0.161F-01	0.53(E-01	0.1711:00	0.237E 00	0.263E 00	0.262E 00
3325.	0.220E-02	0.21215-01	0.10%E 00	0.2011:00	0.26×F, 00	0.283E 00	0.2801.00
3370	0.250E-02	0.285E-01	0.135E 00	0.240E 00	0.295E 60	0.295E 00	0.293E (6)
3375.	0.31017-03	0.385E-01	0.169E 00	0.272E 00	0.312E 00	0.301E 00	0.302E 00
3400.	0.420E-02	0.540E-01	0.211E 00	0.309E 00	0.329E 00	. 0.307E 00	0.30×E (w)
3425.	0.600E-02	0.770E-01	0.267E 00	0.343E.00	0.332E 00	0.314E 00	0.300E 00 0.200E 00
3450.	0.940E-02	0.117E 00	0.333E 00	0.372E 00	0.344E 00	0.303E 00	0.272E 00
3475.	0.165E-01 0.360E-01	0.173E 00 0.258E 00	0.365E 00 0.438E 00	0.385E 00 0.393E 00	0.353E 00 0.315E 00	0.300E 00 0.255E 00	0.265E 00
3500. 3525.	0.720E-01	0.375E 00	0.5100.00	0.409E eq	0.294E 00	0.2711:00	0.2411:00
2550.	0.133E 00	0.401E,00	0.499E 00	0.399E.00	0.251E 00	0.257E 00	0.222E 00
3575.	0.215E 00	0.500E.00	0.443E 00	0.341E 00	0.251E 00	0.230E 00	0.20SE 00
3600.	0.31SE 00	0.4501:00	0.3461:00	0.286E 00	0.245E 00	0.2191:00	0.201E 60
3625.	0.412E 00	0.4001; 00	0.354E 00	0.279E 00	0.233E 00	0.216E 00	0.210E 0u
3650.	0.473E 00	0.405E 00	0.347E 00	0.281E 00	0.23-1200	0.219E 00	0.2136 00
3675.	0.56×E 00	0.501E 00	0.423E 00	0.315E 00	0.243E 00	0.21SE 00	0.200E 00
3700.	0.690E 00	0.70SE (0)	0.673E 00	0.4321.00	0.26×E 00	0.189E 00	0.150E 00
3725.	0.617E 00	0.831E 00	0.566E 00	0.020E 00	0.194E 00	. 0.123E 00	0.113E 00 0.105E 00
3750.	0.1511:01	0.520E aa	0.200E 00	0.131E 00 0.119E 00	0.124E 00	0.107E 00 0.115E 00	0.109E 00
3775. 3500.	0.136E 00 0.455E 00	0.124E 00 0.295E 00	0.120E 00 0.167E 00	0.119E 00	0.115E 00 0.125E 00	0.112E 00	0.122E 00
3825.	0.760E 00	0.503E 00	0.242E 00	0 154E 00	0.129E 00	0.1271.00	0.136E 00
3850.	0.836E 00	0.584E 00	0.277E 00	0.154E 00	0.1611:00	0.145E 00	0.154E 00
3575.	0.840E 00	0.728E 00	0.422E 00	0.236E 00	0.197E 00	0.167E 00	0.177E 00
3900.	0.505E 00	0.500E 00	0.379E 60	0.276E 00	0.227E 00	0.1921:00	0 197E 00
3925	0.117E 00	0 400E 00	0.423E 00	0.315E 00	0.243E 00	0.2021:00	0 209E 00
3950.	0.460E-01	0.300E 00	0 35SE 00	0 290E 00	0.230E 00	0.2021.00	0.207E 00
3975.	0.183E-01	0.205E 00	0.269E 00	0.235E 00	0.195E 00	0.192E 00	0.190E 00
4000.	0.730E-02	0.135E 00	0.186E 00	0.179E 00	0.159E 00	0.16SE 00	0.161E 00
4025.	0.557E-02	0.790E-01	0.113E 00	0.124E 00	0.124E 00	0.134E 00	0.132E 00 0.104E 00
4050.	0.283E-02 0.226E-02	0.415E-01 0.197E-01	0.662E-01	0.886E-01 0.594E-01	0.103E 00 0.801E-01	0.106E 00 0.579E-01	0. S60E-01
4075. 4100.	0.226E-02	0.157E-01 0.860E-02	0.367E-01 0.211E-01	0.394E-01	0.503E-01	0.610E-01	0.710E-01
4125.	0.103E-02	0.5001,-02 0.521E-02	0.119E-01	0.335E-4	0.354E-01	0.450E-01	0.598E-01
4150	0.821E-03	0.36517-02	0.759E-02	0.166E-01	0.258E-01	0.3701:-01	0.499E-01
4175.	0.75215-03	0.1831.472	0.415E-02	0.100E-01	0.179E-91	0.26×E-01	0.418E-01
4200.	0.429E-03	0.141E-02	0.354E-02	0.82111-02	0.142E-01	0.212E-01	0.34NE-01
4225.	0.327E-05	0.90212-03	0.200E-02	0.558E-02	0.112E-01	0.172F01	0 257E-01
4250.	0.225E-03	0 68515.03	0.189E-02	0.512E-02	0.101E-01	0.1641:-01	0.2361:-01
4275.	0.186E-03	0.55112-03	0.156E-02	0.366E-02	0.812E-02	0.136E-01	0 189E-01
4300.	0.173E-03	0.472E-03	0.139E-02	0.306E-02	0.661E-02	0.115E-01	0.150E-01 0.126E-01
4325. 4350.	0.138E-03 0.900E-04	0.395E-03 0.270E-93	0.110E-02 0.968E-03	0.272E-02 0.222E-02	0.587E-02 0.497E-02	0.104E-01 0.921E-02	0.119E-01
4375.	0.752E-04	0.233E-03	0.744E-03	0.208E-02	0.466E-02	0.8761:-02	0.11SE-01
4100.	0.61515-04	0 17:1-04	0.638E-03	0.155E-02	0.465E-02	0.914E-02	0.123[-01
4425.	0.5011.04	0 17:11-0.	0.499103	0 1741 -02	0.4758-02	0.9352.02	0.12812-01
4450.	0.37517-04	0.1230-03	0.4851.403	0.152E-02	0.4 (4102	0.9711 02	0.134101
4475.	0.3951 -01	0.5021.04	0.25815.03	0 10415-02	0 460F-02	0.1011-01	0.14213-01
4500.	0.25714	· 0 72015-01	0.3295.03	0.15(1)-02	0.47711-02	0.11217-01	0.1511-01
4525.	0.2121.31	0.710C-04	0.0081503	0.1571.02	0.59715-02	0 1221 - 11	0.1621/20
4550.	0.21512-01	0.65315-01	0.2821103	0.131102	0.52111-02	0.1.53104	0.17314
4575.	0.215[-04	0.660E-04	0.272E-03	0.152E-02	0.57.3102	0.145101	0.187E-01 0.202E-01
4600. 4625.	0.215E-04 0.217E-01	0.67112-04	0.268E-03 0.255E-03	0.134E-02 0.161E-02	0.607E-02 0.677E-02	0.159E-01 0.173E-01	0. 223F-01
4650	0.2191-01	0.7221204	0.257E-03	0.1691-02	0.7×3E-02	0.173E-01	0.246E-01
4675	6 2261-04	0.771E-0;	0.311103	0.2361.02	0.92515-02	0 22611-01	0.270E-01
4700.	0.25015-04	0.81515-04	0.387E-03	0.2861.402	0.106101	0.25015-01	0.300(1.01
4725.	0.2801.01	0.8151501	0.42013.03	0.3571:-02	0 1241-01	0.276101	6.33NL-01
4750.	0.35115-04	0.192103	0.47012-03	0.46712/02	0.1c3f2-01	0.31312-01	0.3700.01
4775.	0.40515-04	0.200(200)	0.10511-02	0.5661502	0.18541-01	0.3411:-01	0.3991.401
4500.	0.522[20]	0.253E-03	0.1291(a)2	0.736(1.02	0.220E-01	0.3781.01	0.422E-01
4825.	0.6731,-01	0.30617.03	0.183102	0.98217-02	0.2581.01	0.401L-01	C.440E-91
4850.	0.586104	0.399E-03	0.246102	0.12812-01	0.302E-01	0.430101	0.4 SE-01
4973.	0.113E-03	0.61815-0.1	0.0466-02	0.161E-01	0.558E-01	0.45912-01	0.405E-01
4900	0.174[:-03	0.82515-03	0_411E-02	0.20012-01	0.417E-01	0.49311-01	0.4731:-01
4925	0.26512-03	0 16/0E-02	0.7771,-02	0.2(51.0)	0.450E-01	0.50715-01	0 478E-01



5							
4950.	0.35E-03	0.2001-02	0.97812-02	0.31712-01	0.49212-01	0.52715-01	0.47 -101
4975.	0.53NE-03	0.2711:-02	0.167E-01	0.40112-01	0.50312-01	0.52315-01	0.47 17-01
5000.	0.651103	0.30112-02	0.2611-01	0.467E-01	0.5201,-01	0.52615-01	0 4: 05:-01
5025.	0.9871.03	0.55045-02	0.3215-01	0.499E-01	0.52.31.01	0.5101.01	0.4175.01
5050.	0.135E-02	0.86012-02	0.389E-01	0.528L-01	0.513E-01	0.49217-01	0.479.01
5075	0.226E-02	0 130E-01	0.472E-01	0.55915-01	0.500E-01	0.469101	0.41515-01
51 <b>0</b> 0.	0 431E-02	0.1981-01	0.526E-01	6.557E-01	0.4801:-01	0.45215-01	0.400E-01
5125.	0.628E-02	0.282E-01	0.488E-01	0.495E-01	0.4511:-01	0.430E-01	0.3901-01
5150.	0.900E-02	0.390E-01	0.471E-01	0.44917-01	0.430E-01	0.423E-01	0.1-11.01
5175. 5200.	0.180E-01 0.348E-01	0.462E-01 0.710E-01	0.412E-01	0.391E-01 0.360E-01	0.403E-01 0.384E-01	0.415[5-01	0.39315-01
5225.	0.71SE-01	0.590E-01	0.40217-01	0.3601-01	0.3761-01	0.41112-01	0.40512-01
5250.	0.111E 00	0.36×E-01	0 3401-01	0.36912-01	0 4091:-01	0 4541-01	0 4341 01
5275.	0.3291.01	0 2×3E 01	0.365E-01	0.42312-01	9 4611:-01	0 4821-01	0.45015-01
5300	0.251E-01	0.270F-01	0.4321.01	0.505E-01	0.529E-01	0.51115-01	0.4021-01
5325	0.1211:00	0.4221-01	0.5×9E.01	0.5981-01	0.57215-01	0.54415-01	0 4701-01
5350.	0.139E 00	0.105E 00	0.8441.01	0.65711-01	0.59315.01	0.5601, 01	0.4~ 1.01
5375.	0.774E-01	0.710E-01	0.653E-01	0.61SE-01	0.556E-01	0.584E-01	0 4751-01
5400.	0. SSSE-01	0.483T-01	0.579E-01	0.547E-01	0 503E-01	0.49 10.01	0.460E-01
5425.	0 983E-01	0.575E-01	0.283E-01	0.510E-01	0.45115-01	0.449E-01	0 425E-01
5450.	0.99612-01	0.682E-01	0.539E-01	0.450E-01	0.454101	0.4462-01	0.400E-01
5475.	0.650E-01	0.650E-01	0.548E-01	0.49515-01	0.4601:-01	0.4581-01	0.405E-01
5500	0.325E-01	0.520E-01	0.515E-01	0.483E-01	G.449E-01	0.454E-01	0.415E-01
5525.	0.150E-01	0.350E-01	0.451E-01	0.464E-01	0.452E-01	0.449E-01	0.435E-01
5575.	0.620E-02 0.270E-02	0.23SE-01 0.13SE-01	0.369E-01 0.282E-01	0.40°E-01 0.30°E-01	0.414E-01	0.417E-01	0.420E-01
5600	0.113E-02	0.101E-01	0.203E-01	0.2601.01	0 366E-01 0 303E-01	0.354E-01	0.400E-01 0.360E-01
5625.	0.529F-03	0.500E-02	0.148E-01	0.20615-01	0.24715-01	0.295E-01	0.320E-01
5650.	0.36512-03	0.310E-02	0.969E-02	0.154E-01	0 203E-01	0.258E-01	0.250E-01
5675.	0.240E-03	0.130E-02	0.559E-02	0.112E-01	0.164E-01	0.222E-01	0.250E-01
5700.	0.158E-03	0.400E-03	0.417E-02	0.850E-02	0_134E-01	0.190E-01	0.220E-01
3723	0.1031:-03	0.262E-03	0.20SE-02	0.594E-02	0.109E-01	0.162E-01	0.190E-01
3750.	0.741E-04	0.151E-03	0.142E-02	0.455E-02	0.907E-02	0.141E-01	0.170E-01
5773.	0.625E-04	0.135E-03	0.816E-03	0.316□-02	0.69SE-02	0.121E-01	0.1501-01
5800.	0.499E-04	0.111E-03	0.624E-03	0.230E-02	0.551E-02	0.102E-01	0.130E-01
5825. 5850.	0.325E-04 0.231E-04	0.677E-04	0.425E-03	0.124E-02	0 385E-02	0.818E-02	0.120E-01
5575.	0.165E-04	0.563E-04 0.481E-04	0.278E-03 0.247E-03	0.95GE-03	0.290F-02	0.67212-02	0.105E-01
5900	0.126E-04	0 432E-04	0.241E-03	0 911E-03 0 5×6E-03	0 253E-02 0 220E-02	0.612E-02 0.582E-02	0.050E-02 0.540E-02
5925	0.118E-04	0.420E-04	0.235E-03	0.51712-03	0.2091.02	0.571E-02	0.930E-02
5950	0.110E-04	0.40SE-04	0.226E-03	0.812E-03	0 2211-02	0.601E-02	0.9251-02
5975.	0.10112-04	0.400E-04	0.213E-03	0.805E-03	0.2391:-02	0.641E-02	0.920E-02
6000.	0.983E-05	0.395E-04	0.186E-03	0.501E-03	0.247E-02	0.601E-02	0.950E-02
6025.	0.979E-05	0.401E-04	0.193E-03	0.805E-03	0.260E-02	0.732E-02	0.970E-02
6050.	0.976E-05	0.410E-04	0 201E-03	0.814E-03	0.285E-02	0.776E-02	0.100E-01
6075	0.988E-05	0.420E-04	0.210E-03	0 832E-03	0 317E-02	0.S42F-02	0.103E-01
6100	0.991E-05	0.42515-04	0.219E-03	0.877E-03	0.34012-02	0.855E-02	0.105E-01
6125. 6130	0.1026-04	0.455E-04	0.231Eaci	0.5371.43	0.36HF-02	0 62 1 02	0.110F-01
6175.	0.110E-04	0.4×6E-04	0.244E-03	0.97111-03	0.4021.02	0 (e) 1-02	0.11011-01
6200	0 12717-04	0.579E-01 0.612E-04	0.257E-03 0.277E-03	0 11112-02	0.4371 02 0.4651 02	0.1041.01	0.110E-01 0.12 F 01
6227	0.154.64	0.78312-01	0.37512-03	0.1101.02	0.5101-02	0.116E-01	0 10 10 01
6250	0.178E-04	0 9225-04	0 3941-03	0.157E-02	0.555E-02	6.1231-03	0 1551-01
6275.	0.20312-04	-0.115E-03	0.451E-03	0.158E-02	6 601L-02	0 151E-01	0 145E-01
6300	0 230E-04	0 145E-03	0.617L-03	0.185E-02	0.634E-02	0.130E-01	0.150E-01
6325	0.280E-04	0.187E-03	0 723E-03	0.202F-02	0.686E-02	0.146E-01	0.157E-01
6350	0.305E-04	0.20015-03	0 SHE-03	0.213E-02	0.779E-02	0.157E-01	0.164E-01
6373.	0.455E-04	0.244E-03	0 935E-03	0.243E-02	0.841F-02	0.166E-01	0.17215-61
6400	0.661F:-04	0.320103	0.059E-03	0.258E-02	0.902E-02	0.17312-01	0.180E-01
6425.	0.72310-04	0.397103	0.122F2	0.359E-62	0.100E-01	D 1-115-01	0.191Call
6450.	0.54715.04	0.4511.01	0.1011-02	0.42/17-02	0_10sF=01	0.192E-01	0_2000-01
6175. 6500	0 100E 03	0.5916.03	0.174E-02	0.45812-02	0.1161-01	0 200E-01	0.21115-0
6325.	0.165E-03	0.700E-03 0.872E-03	0.2171242 0.2671202	0.51.17.62	0 12415-01	0.2/SE-01	0.2221.44
6 20	0.205E-05	0 110E-02	0 29×12-02	0.6411.02 0.7491.62	0 13115-01	0.211E-01 0.218E-01	0.2441501
6.575	0.25 (E-03	0.1301-02	0.3467-62	0 749E-02 0 811E-02	0.1301.01	0.2186-01 0.230ft-01	0.2550.01
6600	0.338E-03	0.1501.02	0 115E 02	0.890E-02	0.1595.01	0.2371-01	0.2671-01



di25.	0.4370-03	0.17915-02	6.491E-02	0.1071:-01	0.17917-01	0.24515-01	0 276F-64
	0.58115-03	0.1901/02	0.5371.02	0.1161-01	0.1791-01	0.254E-01	0 2871-01
eris.	0.685103	0.2291.02	0.57-1.02	0.1280.01	0.159101	0.26315-01	0.2964-91
6714)	0.9001:-03	0.25012-02	0.6191-02	0.131E-01	0.1951-01	0.275E-01	0.3051-01
6725.	0.121102	0.2501,-02	0.72217-02	0.142F-01	0.20217-01	0.281E-01	0.313101
67.0.	0.15217-02	0.3301:-02	0.513102	0.1G1E-01	0.21215-01	0.288E-01	0.320E-01
6.75.	0.185E-02	0.370102	0.967E-02	0.168F-01	0.22217-01	0.292E-01	0.329E-01 0.335E-01
6500	0.220F-02	0.4301:-02	0.929102	0.153E-01	0.233F-01	0.294E-01	
6825.	0.255E-02 0.290E-02	0.500[2-02 0.580[2-02	0.114E-01 0.1671:-01	0.195E-01 0.215E-01	0.245E-01 0.260E-01	0.289E-01 0.291E-01	0.339F-4 0.3431-4
6850.	0.3201;-02	0.670102	0.2051-01	0.2371:-01	0.27413-01	0.293E-01	0 5451 - 1
6900	0.360102	0.880[-02	0.220E-01	0 25415-01	0.28215-01	0.300E-01	0.3131-1
6:25.	0.400E-02	0.92013-02	0.2381.01	0.27.0101	0.29017-01	0.30412-01	0.3111-4
6950	0.4601:-02	0.1051-01	0 2721 01	0 27917-01	0.2981:-01	0.310E-61	0.5390-4
6975.	0.530F-02	0.125E-01	0.30412-01	0.20215-01	0.2971-01	0.312E-01	0.33E-4
7000.	0.620102	0.152E-01	0.311101	0.20312-01	0.2931:-01	0.310E-01	0.225F-1
7025.	0.760E-02	0.182E-01	0.341E-01	0.297E-01	0.290E-01	0.300E-01	0.313E-4
70.0.	0.980E-02	0.222E-01	0.395101	0.318E-01	0.291E-01	0.291E-01	0.299E-d1
7075.	0.132E-01	0.271E-01	0.402E-01	0.294E-01	0.274E-01	0.252E-01	0.283E-01
7100	0.1901-01	0.335E-01	0 421E-01	0.286E-01	0.262E-01	0.269E-01	0.253E-01
7125.	0.240E-01	0.432E-01	0.431101	0.276E-01	0.24512-01	0.257E-01	0.243E-cl
7150	0.28SE-01	0.570E-01	0.458E-01	0.270E-01	0 22517-01	0.243E-01	0.223E-01 0.208E-01
7175.	0.323E-01	0.740E-01 0.890E-01	0.449E-01 0.435E-01	0.261E-01 0.255E-01	0.214E-01	0.221E-01	0.199E-01
7200. 7225.	0.570E-01 0.216E-01	0 680E-01	0.378E-01	0.239E-01	0.199E-01 0.195E-01	0.196E-01 0.192E-01	0.199E-01
7250	0.126E-01	0.475E-01	0.364E-01	0.235E-01	0.197E-01	0.192E-01	0.157E-01
7275	0.11715-01	0.369E-01	0.355E-01	0.24915-01	0.21215-01	0 204E-01	0.2000-01
7300	0.140E-01	0.37015-01	0.419101	0.2725-01	0 225101	0.213E-01	0.224E-94
7325.	0.425E-01	0.4181:-01	0.440E-01	0.280E-01	0.24SE-01	0.229E-01	0.243E-01
7350.	0.640E-01	0.4601:-01	0.427E-01	0.290E-01	0.263E-01	0.238E-01	0.260E-01
7375.	0.385E-01	0.385E-01	0 374E-01	0.259E-01	0.235E-01	0.224E-01	0.260E-01
7400.	0.182E-01	0.179E-01	0.282E-01	0.231E-61	0.211E-01	0.214E-01	0.240E-01
7425.	0.170E-01	0.810E-02	0.191E-01	0.175E-01	0.181E-01	0.194E-01	0.210E-01
7450	0.161E-01	Ø 370E-02	0.105E-01	0.127E-01	0.152E-01	0.171E-01	0.150E-01
7475. 7500.	0.145E-61 0.175E-02	0.170E-02 0.140E-02	0.554E-02 0.385E-02	0.855E-02 0.595E-02	0.113E-01 0.803E-02	0 131E-01 0 915E-02	0.150E-01 0.120E-01
7525.	0.772E-03	0.7511:-03	0.3511.42	0.575E-02	0.537E-02	· 0.594F-02	0.800E-02
7550.	0.491E-03	0.600E-03	0.301E-02	0.453E-02	0.350E-02	0.434F-02	0 600E-02
7575.	0.275E-03	0 41012-03	0.19312-02	0.3661,-02	0.319E-02	0.332E-02	0. 500E-02
7690.	0.185E-03	0.28012-03	0.1311:-02	0.232E-02	0.247E-02	0.256E-02	0.420Fe02
7625.	0.101E-03	0.160E-03	0.915E-03	0.150E-02	0.186E-02	0.197E-02	0.379E-92
7650.	0.691E-04	0.110E-03	0.565E-03	0.114E-02	0.2051.42	0.192E-02	0.3401202
7675.	0.476E-04	0.750E-04	0.114E-02	0.124E-02	0.175E-02	0.187E-02	0.320E-02
7700.	0.305E-01	0.590E-04	0.529E-03	0.114F-02	0.160E-02	0.185E-02	0.300E-02
7725.	0.240E-04	0.480E-04	0.293E-03- 0.122E-03	0.842E-03	0.141E-02	0.184E-02	0 29012-02
7750. 7775	0.176F-04 0.126F-04	0.360F-0. 0.240E-04	0.1211-03	0.4375.03	0.124E-02 0.118E-02	0.182E.02 0.187E.42	0.2941.00
7500	0.100	0 1701 -01	U to hard	0.434.03	0.12615-02	0.1021.02	9 2 - 1002
7525	0.5567.455	0.1201-04	0 8001-21	0.367103	0.1191-92	0.19(1)-02	0.30 15-02
7830	0.09910.05	a motters	0.7161 - 1	0.3511.03	0 1.02	0.1916-2	0 1 1 12
7.77	0.295, 50	0.8201.05	0.07 (0.1	0.2511.000	0.1117 2	0.19-37-02	VI 31 F. C.
Tyen)	0.2	0.800	0.465(201)	(1 214 (21)	0.1171 - 2	0.201F-02	0.3201302
7925.	0 2231.0	0.5201.05	0.36713-04	0.2521.001	0.416E-02	0.205F-02	0.200000
7950	0.2261.465	0 >101-05	0.371101	0.2681,-03	0.127E-02	0.211E-02	0_340E-02
7975.	0 223E-05	0.9201.05	0.3961.04	0.273E-03	0.12812-02	0.216E-02	0 35 11-02
S000	6.2351.465	0.104104	0.415E-04	0.263E-03	0.121E-02	0.221E-02	0.36511-02
8025.	0.2801.05	0.12515-04	0.6331-01	0.3531.03	0.1361502	0.23115-02	0.38012-02
8050. 8075.	0.3101.05	0.150[201	0.079(104	0 492Car3 0 580Car3	0.1701-2	0.21117-02	0.40 5-02
S160	0.1201.03	0 180 -01	0.1201.01	o asin and	0.10711402	0.251E-02 0.257E-02	0.4201.02
8125.	0.5465.05	0.2001.01	0 131 0	0.3471303	0.1731502	0 267F-02	0.4405.02
\$130	0.6001.00	0.2701.04	0.1213	0.541.01	0.17211-2	0.2741.402	0.4571.02
8175	0.7265 -65	0.3001	0.2041.33	0.6811503	0.1811342	6.28 (15.02	0.4681-02
8200	0 5201 05	0 11 11 -0-1	0.2762.71	0.81915(0)	0. Pediac2	0.29715-02	0.4791.402
8725	0.1001.04	0.3801.03	0.3171.00	0.8595.03	0.2141-02	0.30815-02	0.4851-02
8250.	0.12515-01	0.4.01.01	6 2401,474	0.51545.03	0.2201502	0.31715-02	0.49032402
\$27.5	0.1451-01	9, 3000, 94	0.1521.403	0.409.02	0.23815-02	0.200E-02	0.43075-62



\$50.	0.17515-04	0.5601-04	0.3011.03	0.9411-03	0.2101.02	0.3421562	0.5002-02
8325.	0.1981-01	0.6301.04	0.280(0.0)	0.1071-02	0.2601.02	0.35.11.42	0.50115-02
8350.	0.230E-01	0.7101.01	0.2761.03	0.1091,-03	0.2721.02	0.36515-02	0.5021-02
\$375	0.2501:-04	0.8301-64	0.3691-03	0.127F-02	0.2951 02	0.3771.402	0.50115-02
\$100.	0.33012-04	0.89015-01	0.43015-03	0.13905-02	0.3061 -02	0.38511402	0.50012-02
8425.	0.3G0E-04	0.9 WE-04	0.37111-03	0.13512-02	0.306102	0.38415-02	0.499E-02
8450.	0.390E-04	0.950E-04	0.434E-63	0.147102	0.316102	0.38515-02	0.495E-02
8475.	0.4001:-01	0.99015-04	0.3971-03	0.140E-02	0.31815-02	0.38415-02	0 (90F-02
\$500.	0.40012-01	0.980E-04	0.3611.03	0.1411-02	0.317102	0.38117-02	0.480E-02
\$525.	0.3901:-04	0.940E-04	0.3901-03	0.142E-02	0.31117-02	0.37615.02	0.475E-02
\$550	0.3801.04	0.90012-04	0.3801-03	0.14513-02	0.01×1.02	0.3751242	0.463E-02
\$575.	0.3301.04	0.75015-04	0.3581-03	0.1341.02	0.3101.02	0.3721-02	0.455102
8600	0.300E-01	0.65012-01	0.3435-03	0 130E-02	0.3091202	0.3691342	0.44317-02
8625	0.2701:-04	0.550E-04	0.38211.03	0.1431.402	0.3151.02	0.36915-02	0.43315-02
Se50.	0.24015-04	0.56012-04	0.3431-03	0.1361-02	0.0001.02	(1.36.31.7)2	0.4201-02
5075.	0.2001:-01	0.4501504	0.3097.03	0.13415.02	0.36617.05	0.3591.02	0.4081.02
\$700.	0.180E-04	0.400E-04	0.28115-03	0.12715-02	0.294102	0.341L-02	0 395E-02
\$725.	0.170E-04	0.3601:-04	0.276E-03	0.1241-02	0.5661.05	0.336E-02	0.380E-02
8750	0.160E-04	0.310L-04	0.27217-03	0.1221-02	0.2841-02	0.323102	0.367E-02
8775.	0.1401:-04	0.280E-04	0.241E-03	0.117E-02	0.273E-02	0.300E-02	0.351E-02
8890.	0.120E-04	0.250E-01	0.2371-03	0.115102	0.269102	0_297E-02	0.335E-02
8825.	0.100E-04	0.220E-04	0.215€-03	0.111102	0.25915-02	0.284E-02	0.323E-02
\$850.	0.920E-05	0.198E-04	0 206F-03	0.1051-02	0.24612-02	0.269F-02	0 310E-02
8875.	0.810E-05	· 0.170E-04	0.20512-03	0.100T-02	0.235E-02	0.257E-02	0.295E-02
\$900	0.720E-05	0.160E-04	0.177E-03	0.0211-03	0.220E-02	0.245E-02	0.280E-02
8925	0.650E-05	0.150E-04	0.172103	0.83415-03	0.20515-02	0.232F-02	0.265E-02
89.30	0.590F-05	0.13017-04	0.14717-03	0.7351.403	0.15415-02	0.21812-02	0.25311-02
897.5	0.540E-05	0 110E-01	0.120103	0.6291.03	0.1771.02	0.203E-02	0.240E-02
9000	0.460E-05	0.950E-05	0.96012-04	0.513E-03	0.154E-02	0.180E-02	0_238E-02
9025	0.420E-05	0 SOUE-05	0.578E-04	0.314E-03	0.1231-02	0.154E-02	0 218E-02
9050.	0.380E-05	0.720E-05	0.529E-04	0.292E-03	0.114E-02	0.137E-02	0.207E-02
9075	0.330E-05	0.660E-05	0.485F-04	0.269E-03	0.102E-02	0.122E-02	0.197E-02
9100	0.290F-05	0.580E-05	0.430E-04	0.23912-03	0.89612-03	0.107E-02	0.187E-02
9125.	0.2701-05	0.52012-05	0.259104	0.193E-03	0.784103	0.944E-03	0.179E-02
9150	0.240E-05	0.450E-05	0.316104	0.20710-03	0.6711-03	0.818E-03	0.171E-02
9175	0.2201-05	0.40eE-05	0.444105	0.60215-04	0.516103	0.750E-03	0.163E-02
9200	0.190E-05	0.360105	0.32415-05	0.460E-01	0.43915.03	0.6881.03	0.156E-02
9227	0.1701:-05	0.320E-05	0.180E-05	0.3211.01	0.384E-03	0 6551,-05	0.149E-02
9250	0.1(01)-05	0.280E-05	0.1711:-05	0.344101	0.3401-03	0 G16E-03	0.143E-02
9275	0 130E-05	0.250E-05	0.299E-05	0.60012-04	0.343103	0.6191790	0.138E-02
9300	0.120E-05	0.22017-05	0.29512-05	0.60012-04	0.443103	0.61915-0	0.133E-02



#### APPENDIX F

Carbon Dioxide emission data for the range 3000-3770 cm<sup>-1</sup>.

This appendix presents the carbon dioxide emission data as given in the report:

Ludwig, C.R., "Tables of Carbon Dioxide Absorption Coefficients" as obtained in private conversations with Dr. Ludwig when he was at General Dynamics.

The data is given in tabular form as a function of temperature and wavenumber. The equations utilizing these numbers are given in Section 3.2.

-		_	ċ
			۱
	v	v	d
•	•		1

			3000 K	1.166-02	1.270-02	1.373-02	1.567-02	1.761-02	2.032-02	2.303-02	2.489-02	2.675-02	3.016-02	3.356-02	3.803-02	4.250-02	4.590-02	4.929-02	5.510-02	6.091-02	6.984-02	7.878-02	8-107-02	8.336-02	9.171-02	1.001-01	1.124-01	1.248-01	1.276-01
			2400 K	•0-	-0-	-0-	-0-	-0-	-0-	-0-			3.399-03	6.798-03	8.290-03	9.782-03	1.131-02	1.324-02	-	1.406-02	4.132-04	N	Z.755-02	3.052-02		3.958-02	4	ິດ	5.728-02
OF C02		BAND	K 1800 K	• 0 -	•0-	•0-	•0-	•0-	• 0 -	•0-	•0-	•0-	•0-	•0-	•0-	• 0 -	•0-	•0-	1	-05 5.917-04	-05 1.163-03		-05 2.267-03	-04 3.003-03		-04 4.785-03		04 7.677-	-03 9.785-03
COEFFICIENTS	AT STP)	2.7 MICRON COMBINATION BAND	200 K 1500	• • • •	• 0 -	-0-	-0-	-0-	-0-	•0-	•0-	0	-0-	• 0 •	2.145-10-0.	4.290-10-0.	1.516-09-0.	2.602-09-0.	)	505-08 1.361-05	•883-08 2·7×3-05		.548-07 8.452-05	.271-07 1.446-04	246-06 2.419-04	064-06 3.953-04	12-06 6.295-04	37-06 9.74	91-05 1.463-
ABSORPTION COE	K (PER CM	7 MICRON C	600 K 12	• 0 -	•0-	• 0 -	• 6-		•0-	• 0-	•0-	•0-	•0-	• 0					00	•	4		S	4.2	505-20 1.	010-20 2.	.554-18 4.41	38-18 9.2	.243-17 1.8
ABS		2	300 K	0	• • •	•0-	•••		.0-		• 6-	• 0 -								•0-		0		•0-	3.	. 7.	•		• 9
			MICRON	3.33 -0.	3.32 -0.				3.28 -0.	3.27 -0.	3.26 -0.	3.25 -0		3.23 -0.	3.22 -0	3.21 -0.	3.19 -0	3.18 -0.	3.17 -0.	3.16 -0.	3.15 -0.	3.14 -0	3.13 -0.	3.13 -0.	3.12 -0	3.11 -0	3.10 -0	3.09 -0	3.08 -0
			1 / CM	3000	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	N	N



3000 ×	1.304-01 1.414-01 1.524-01	667- 811-	906-	2.761-01	2.397-01	.637- .718- .126-	0, 0, 00	053-	000000000000000000000000000000000000000
	6.296-02 7.520-02 7.927-02	. 940-	.179-	1.495-01	1.763-01		516-	6.54 6.88 1.88 1.88 1.88 1.88 1.88 1.88 1.88	98 98 13 60 00 00
CO2 (CCNT.D	1.519-02	165-0659-0	776-0	5.986-02	8.066-02 9.186-02	.185-0 .354-0 .511-0		-245- -242-	469- 664- 693- 772- 693- 033-
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.125-03	252-0	.0-081.	2.412-02	84. 84.	493-0 862-0 178-0	0 1/4	640- 816- 038-	0 4 4 0 0 0 0 1 7 10 0 0
ON COEFFICIENT (PER CM AT STP RON COMBINATIO 1200 K 15	3.780-05	558-0 542-0 774-0	279-0	4.378-03 6.029-03	331- 155- 586-	104-0 806-0 617-0	683-0 915-0 424-0	112-0	4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ESORPTI K Z.7 MIC 600 K	1.218-16 2.302-15 4.483-15	724-1 500-1	368-1	5.914-10 2.802-09	72.	225-0 470-0 230-0	91-0	299-	000000
3 0 7	000	1.100-32 2.200-32 8.768-31	397-2	4.340-26 1.442-24 4.549-23	358-2	493-1 730-1 219-1	385	295-0	300- 198- 339- 747- 162- 889-
ν 0 0 0 0 0	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		000	2.00 2.00 2.00 2.00	000	2.93			00000000
1 / CM	3260	300 6	33	3340 3350 3360	100	0 4 4	0 4 5	2 T T B B B B B B B B B B B B B B B B B	4 0 0 0 0 0 0 0 0 1 0 0 4

F-3



	3000 K	1 4.	1 4.292-01	_	1 4.5	1 4.608-01	1 4.	1 4.822-01	1 5.008-01	1 5.029-01	1 5.050-01	1 5.216-01	1 5.383-01	1 5.	1 5.290-01	1 5.549-01	_	_	1 5.558-01	1 5.600-01	1 5.642-01	1 5.646-01	1 5.651-01	1 5.555-01	1 5.459-01	1 5.468-01	1 5.477-01	1 5.485-01	•	1 5.376-01
ĵ.	2400 K	3.358-0	3.353-0	3.508-0	-665-	3.684-0	3.705-0	3.965-0	4.225-0	4.277-0	4.330-0	4 - 521-0	4.712-0	4.662-0	4.613-0	4.948-0	5.283-0	5.218-0	5.154-0	5.254-0	5.354-0	5.375-0	5.397-0	5.302-0	5.207-0	5.277-0	5.346-0	5.388-0	-624.	5.340-0
COZ (CONT.D	1800 K	2.837-01	2.643-01	2.740-01	2.836-01	2.809-01	2.782-01	•	3.226-01	3.264-01	3.301-01	3.345-01	3.390-01	•	3.377-01	3.706-01	4.035-01	4.160-01	4.325-01	4.536-01	4.746-01	4.803-01	4.859-01	4.841-01	4.822-01	5.005-01	5.187-01	14-	-541-	5.032-01
OF OF N		2.318-01	2.566-01	2.622-01	2.677-01	2.632-01	2.587-01	2.774-01	2.961-01	2.956-01	2.952-01	2.798-01	2.643-01	2.641-01	2.638-01	2.797-01	2.957-01	3.366-01	3.776-01	4.019-01	4.261-01	4.323-01	4.385-01	4.495-01	4.605-01	4.921-01	5.239-01	.303-	.368-	5.045-01
(PER CM AT STP)	-	2.763-01	2.544-01	-611-	2.679-01	2.631-01	2.563-01	2.784-01	2.986-01	2.903-01	2.821-01	2.413-01	2.004-01	1.958-01	1.911-01	2.163-01	2.415-01	2.752-01	3.089-01	3.248-01	3.407-01	1.877-01	3.471-02	2.197-01	4.046-01	4.544-01	5.042-01	-528-	.465-	5.145-01
ABSORPTION  K (PE	600	1.684-01	1.912-01	-	2.537-01	2.716-01	2.648-01	3.578-01	4.261-01	4.560-01	4.255-01	3.292-01	1.740-01	1.063-01	2.321-01	3.494-01	4.134-01	3.977-01	3.130-01	2.013-01	1.127-01	7.624-02	8.834-02	1.290-01	1.881-01	.6	3.634-01	-1691-	9	6.423-01
	300 K	2.125-02	4.482-02	6.359-02	8.610-02	1.106-01	1.465-01	2.626-01	4.404-01	5.782-01	6.342-01	5.391-01	2.525-01	1.824-01	6.008-01	8.115-01	7.264-01	4.525-01	1.890-01	4.820-02	7.095-03	3.107-03	7.331-03	1.776-02	4.043-02	8.591-02	9	-021-	-985-	7.218-01
	MICRON	2.82	2.81	2.81	2.80	2.80	2.79			2.78	2.78	2.77	2.77			2.76		2.75	2.75	2.74	2.74	2.74	2.73	2.73	2.72	•	•	2.71	•	2.71
	1/CM	3550	3560	3565	3570	3575	3580	3585	3590	3888	3600	09	3610	3615	3620	3625	3630	3635	3640	3645	3650	3655	3660	3665	3670	3675	3680	3685	3690	69

F-4

			ABSORPTION K (F 2.7 MICRG	TION COEFFICIENTS K (PER CM AT STP) ICRON COMBINATION	ABSORPTION COEFFICIENTS OF COZ (CONT.D) K (PER CM AT STP) Z-7 MICRON COMBINATION BAND	COZ (CONT.	â	
1 / CM	IZCM MICRON	300 K	9009 X	600 K 1200 K 1500 K	1500 K	1800 K	2400 K	3000 K
3700	2.70	8.999-01	6.584-01	4.786-01	4.722-01	4.822-01	5.252-01	5.259-01
3705	2.70	9.102-01	5.888-01	4.041-01	4.234-01	4.554-01	5.101-01	5.038-01
3710	2.70	6.358-01	4.169-01	3.296-01	3.746-01	4.286-01	4.950-01	4.817-01
3715	5.69	6.328-02	1.545-01	3.313-01	3.832-01	4.337-01	4.800-01	4.497-01
3720	5.69	6.949-01	3,365-01	3.330-01	3.918-01	4.388-01	4.649-01	4.177-01
3725	2.68	1.159+00	5.998-01	4.776-01	4.953-01	4.942-01	4.603-01	3.845-01
3730	2.68	1.256+00	8.751-01	6.222-01	5.988-01	5.496-01	4.557-01	3.513-01
3735	2.68	9.516-01	9.645-01	6.958-01	6.468-01	5.735-01	4.482-01	3.315-01
3740	2.67	5.092-01	9.013-01	7.695-01	6.947-01	0.973-01	4.407-01	3.118-01
3745	2.67	1.869-01	6.716-01	6.933-01	6.351-01	5.457-01	3,929-01	2.709-01
3750	2.67	4.535-02	3.965-01	6.171-01	5.755-01	4.942-01	3.450-01	2.300-01
3755	5.66	7.247-03	1.762-01	4.440-01	4.339-01	3.840-01	2.709-01	1.793-01
3760	5.66	7.296-04		5.455-02 2.708-01 2.923-01	2.923-01	2.738-01	1.967-01	1.285-01
3765	2.66	2.915-05		1.048-02 1.505-01 1.667-01	1.667-01	1.594-01	1.168-01	7.680-02
3770	2.65	1.079-07	6.896-04	3.010-02	1.079-07 6.896-04 3.010-02 4.100-02 4.508-02 3.681-02 2.507-02	4.508-02	3.681-02	2.507-02

F-5 UNCLASSIFIED



SORT(4 X ALPHA X SZDXD) AT STP 2.7 MICROM COMBINATION BAND

ABSORPTION COEFFICIENTS OF CO2

1/CM	MICRON	300 K		¥ 009	1200 K	
0	3	000		COCCE	00000	0
21	-	0000		3000C	0000	0
02	3	000		0 30000	00000	0
3030	3.30	.0000E	00	.0000E 00	. G000E	0
04	2	000		O BOOOD	.0000	00
0.5	3	000		0 300C0	0000	0
90	5	000		00000	.0000	0
07	5	000		00000	.0000	0
08	.2	000		COCOE C	.0000	0
60	.2	000		OOOE O	0000.	3
10	3	000		O BOOOD	00000	3
1 1	2	000		OOOCE O	.0000	0
12	.2	000		COOCE C	.7891	0.
13	-	000		O BOCCO	.0000	0
14	-	000		0 3000	.1704E	0
15	-	000		C BOOCO	00000	0
16	-	000		OCCOO C	.4161E	0
17	-	000		C BOOO	- 0000E	0
18	-	000		0 30000	.9944	0
19	-	000		OCCOO C	. COOOE	0
20	-	000		OCCUPE O	.2316	0
21	-:	000		OCCE O	.0000	00
22	-	000		049E-0	. 5251	0
23	0	000		OCOE O	.7813E	0
24	0	000		014E-0	.1152	0
0		000		V 3000	16005	0

F-6 UNCLASSIFIED



ABSORPTION COEFFICIENTS OF CO2 (CONT.D.)
SORT(4 X ALPHA X S/DXD) AT STP
2.7 MICROM COMBINATION HAND 00 00 00 .9451E-01 .2436E-01 .3486E-01 .4929E-01 .6876E-01 1200 K .1277E .1695E .3402E .2199E .2782E .3958E .4635E .5587E .6713E .7621E .8577E .9407E .1014E •1075E .1127E .1194E .1223E .1290E .1156E .1241E .1372E .1259E .1172E 00 .1284E-07 00 BC0000 00 .0000E 00 .5983E-05 .1476E-03 CO BOOOD OO .4619E-06 .2582E-05 .3147E-03 .1340E-02 .9734E-02 00 .7872E-07 .1366E-04 .6797E-04 .5677E-03 .5173E+02 .1771E-01 .3107E-01 .5224E-01 .8376E-01 .3073E-04 .2669E-02 800 K .1269E .5187E .1799E .2336E .2795E .4481E .1241E-12 .8047E-16 .3433E-14 .9185E-03 .5090E-15 .2087E-13 .1203E-09 .3146E-08 .1387E-05 .2225E-04 8209E-04 .2842E-03 .4077E-11 .2247E-09 .6255E-09 .1529E-07 .7163E-07 .3222E-06 5704E-05 .2744E-02 .7506E-01 4085E-01 .1656E-0 .0000E -0000E .1269E MICRON 3.06 3.04 2.96 2.93 2.98 2.97 2.90 2.89 2.88 2.87 2.86 2.85 2.84 2.84 2.82 2.91 2.83 3310 3370 3380 3260 3270 3280 3290 3330 3340 3350 3360 3390 3400 3430 3450 3460 3470 3510 3450 3440 3480 3490 3500 3530



ABSORPTION COEFFICIENTS OF CO2 (CONT.D) SORTIG X ALPHA X SZUXD) AT STP 2.7 MICROM COMBINATION BAND 1200 K .1242E .1453E .1112E .1204E .1085E .1305E .1337E •1994E .2065E . 2222E .1893E .2293E .2274E .2098E .2065E .1275E .1586E .1982E .2253E .5760E 00 .4613E 00 .5829E 00 .5179E 00 .3129E 00 .2979E 00 .3261E 00 .2403E-01 .5289E .3498E .7191E .6502E .8247E .3489E .8619E .7022E •1171E .7947E .2849E 2452E 00 2451E 00 4137E 00 2590E 00 3368E 00 2176E 00 3783E 00 3783E 00 3783E 00 4783E 00 3579E 00 3579E 00 3783E 00 3135E 00 00 .1658E-03 2379E-01 2065E MICRON 2.65 2.65 2.65 2.65 3570 3580 3590 3600 3620 3620 3630 3650 3660 3670 3680 3090 3710 3720 3740 3760

F-8



#### APPENDIX G

Carbon Dioxide Emission data for the range 2050-2500 cm-1.

This appendix presents the Carbon Dioxide emission data as given in the report:

Jackson, H., Tracey, "A Model for the Spectral Emission of Carbon Dioxide in the 4.3 \( \mu\) Band". Report No. RE-TR-69-9 April 1968. U.S. Army Missile Command, Redstone Arsenal, Alabana.

The data is given in tabular form as a function of temperature and wavenumber. The equations utilizing these numbers are given in Section 3.3



# The Spectral Band Parameter S/d as a Function of Temperature

#### ACDZ

WAVE NUMBER			(DEGI	EMPERATURI REES KELV	(NI		
(1/CM)	300.	600.	900.	1200.	1500.	1800.	2100•
2050. 2055. 2060. 2065. 2070.	4.80E-03 8.01E-03 1.40E-02	7.00E-04 1.03E-03	4.50E-04 5.72E-04 7.53E-04	5.20E-04 6.37E-04 8.23E-04	1.37E-03	7.20E-03 9.08E-03 1.14E-02	3.00E-02 3.56E-02
2075. 2080. 2085. 2090. 2095.	1.65E-02 1.08E-02 6.31E-03	2.08E-03 1.99E-03 1.79E-03 1.63E-03 1.52E-03	1.30E-03 1.44E-03 1.57E-03	1.66E-03 2.04E-03 2.54E-03		2.13E-02	6.28E-02 7.21E-02 8.30E-02
2100. 2105. 2110. 2115. 2120.	1.33E-03 9.55E-04 6.95E-04	1.47E-03 1.41E-03 1.26E-03 1.07E-03 8.82E-04	2.35E-03 2.32E-03	2.65E-03 2.30E-03 1.89E-03 1.86E-03 2.46E-03	1.36E-02 1.73E-02	5.86E-02 6.86E-02	1.24E-01 1.41E-01
2125. 2130. 2135. 2140. 2145.	4.88E-04	7.11E-04 7.30E-04	1.40E-03 1.38E-03 1.53E-03 1.73E-03 1.95E-03	3.52E-03 4.98E-03 6.91E-03 9.55E-03 1.31E-02	5.46E-02 6.73E-02	9.61E-02 1.15E-01 1.37E-01 1.63E-01 1.92E-01	2.31E-01 2.61E-01 2.95E-01
2150. 2155. 2160. 2165. 2170.	5.05E-04 5.22E-04 5.47E-04	7.81E-04 8.16E-04 8.56E-04 9.16E-04 1.01E-03	2.47E-03 2.78E-03 3.25E-03	2.52E-02 3.43E-02 4.63E-02	1.24E-01 1.53E-01 1.88E-01	2.25E-01 2.62E-01 3.06E-01 3.55E-01 4.07E-01	4.18E-01 4.68E-01 5.22E-01
2175. 2180. 2185. 2190. 2195.	6.95E-04 7.83E-04 9.01E-04	1.18E-03 1.46E-03 1.91E-03 2.60E-03 3.91E-03	8.82E-03 1.40E-02 2.18E-02	8.20E-02 1.09E-01 1.43E-01 1.88E-01 2.46E-01	3.32E-01 3.95E-01 4.70E-01	4.67E-01 5.36E-01 6.13E-01 7.00E-01 7.93E-01	7.10E-01 7.82E-01 8.57E-01
2200 • 2205 • 2210 • 2215 • 2220 •	1.69E-03 2.45E-03 4.28E-03	6.27E-03 1.02E-02 1.65E-02 2.74E-02 4.54E-02	7.20E-02 1.00E-01	6.01E-01	7.67E-01 8.88E-01 1.01E-00	8.93E-01 1.00E-00 1.11E-00 1.23E-00 1.35E-00	1.08E-00 1.17E-00 1.26E-00



### ACOZ

WAVE				EMPERATURI REES KELV			
(1/CM)	300.	600.	900•	1200.	1500.	1800.	2100•
2225 • 2230 • 2235 • 2240 • 2245 •	1.60E-02	7.54E-02	2.79E-01	8.76E-01	1.31E-00	1.48E-00	1.45E-00
	3.10E-02	1.22E-01	3.67E-01	1.04E-00	1.48E-00	1.61E-00	1.55E-00
	5.71E-02	1.85E-01	4.73E-01	1.24E-00	1.65E-00	1.74E-00	1.64E-00
	9.84E-02	2.66E-01	6.05E-01	1.46E-00	1.84E-00	1.86E-00	1.72E-00
	1.56E-01	3.65E-01	7.70E-01	1.71E-00	2.03E-00	1.99E-00	1.80E-00
2250 • 2255 • 2260 • 2265 • 2270 •	2.32E-01	4.86E-01	9.75E-01	1.98E-00	2.22E-00	2.11E-00	1.87E-00
	3.15E-01	6.30E-01	1.22E-00	2.28E-00	2.42E-00	2.22E-00	1.93E-00
	3.93E-01	7.98E-01	1.53E-00	2.60E-00	2.61E-00	2.32E-00	1.98E-00
	4.63E-01	1.00E-00	1.90E-00	2.93E-00	2.79E-00	2.41E-00	2.03E-00
	5.21E-01	1.26E-00	2.36E-00	3.27E-00	2.96E-00	2.49E-00	2.06E-00
2275 • 2280 • 2285 • 2290 • 2295 •	6.17E-01	1.63E-00	2.89E-00	3.61E-00	3.12E-00	2.55E-00	2.08E-00
	7.99E-01	2.20E-00	3.52E-00	3.94E-00	3.26E-00	2.61E-00	2.10E-00
	1.17E-00	3.05E-00	4.25E-00	4.25E-00	3.38E-00	2.65E-00	2.11E-00
	1.84E-00	4.32E-00	5.10E-00	4.53E-00	3.48E-00	2.69E-00	2.12E-00
	2.89E-00	5.83E-00	5.96E-00	4.76E-00	3.55E-00	2.70E-00	2.12E-00
2300 • 2305 • 2310 • 2315 • 2320 •	4.40E-00 6.36E-00 8.72E-00 1.11E+01 1.34E+01	9.18E-00	6.77E-00 7.44E-00 7.90E-00 8.16E-00 8.25E-00	5.07E-00 5.14E-00 5.16E-00	3.60E-00 3.62E-00 3.63E-00 3.62E-00 3.60E-00	2.71E-00 2.70E-00 2.69E-00 2.67E-00 2.65E-00	2.11E-00 2.10E-00 2.07E-00 2.05E-00 2.01E-00
2325 • 2330 • 2335 • 2340 • 2345 •	1.53E+01	1.51E+01	8.18E-00	5.12E-00	3.59E-00	2.64E-00	1.99E-00
	1.67E+01	1.42E+01	7.97E-00	5.08E-00	3.57E-00	2.61E-00	1.95E-00
	1.75E+01	1.27E+01	7.70E-00	5.08E-00	3.56E-00	2.57E-00	1.90E-00
	1.76E+01	1.11E+01	7.45E-00	5.10E-00	3.55E-00	2.53E-00	1.85E-00
	1.74E+01	1.03E+01	7.43E-00	5.15E-00	3.52E-00	2.46E-00	1.76E-00
2350 • 2355 • 2360 • 2365 • 2370 •	1.73E+01	1.11E+01	7.87E-00	5.27E-00	3.50E-00	2.40E-00	1.69E-00
	1.81E+01	1.32E+01	8.85E-00	5.35E-00	3.43E-00	2.29E-00	1.59E-00
	1.95E+01	1.56E+01	1.00E+01	5.33E-00	3.28E-00	2.12E-00	1.43E-00
	2.09E+01	1.71E+01	1.01E+01	5.11E-00	3.05E-00	1.94E-00	1.29E-00
	2.11E+01	1.80E+01	9.50E-00	4.90E-00	2.69E-00	1.67E-00	1.09E-00
2375 • 2380 • 2385 • 2390 • 2395 •	1.82E+01	1.60E+01	7.83E-00	3.91E-00	2.28E-00	1.41E-00	8.50E-01
	1.01E+01	7.20E-00	6.00E-00	3.07E-00	1.77E-00	1.05E-00	6.50E-01
	1.19E-00	2.54E-00	3.45E-00	2.19E-00	1.35E-00	8.02E-01	4.50E-01
	2.97E-01	9.97E-01	1.70E-00	1.20E-00	7.80E-01	4.80E-01	3.00E-01
	9.75E-02	2.61E-01	3.62E-01	4.95E-01	3.81E-01	3.21E-01	1.75E-01
2400.	5.01E-02	7.50E-02	1.00E-01	1.50E-01	1.500-01	1.30E-01	1.00E-01



# The Spectral Band Parameter $S^{\frac{1}{2}}/d$ as a Function of Temperature

# COZK.

WAVE				MPERATURE			
NUMBER (1/CM)	300.	600.	900•	REES KELV	1500 •	1800•	2100.
2050 • 2055 • 2060 • 2065 • 2070 •	4.60E-02	6.60E-02	1.33E-01	3.35E-01	7.90E-01	2.90E-00	8.90E-00
	4.90E-02	7.00E-02	1.37E-01	3.52E-01	8.85E-01	3.20E-00	9.39E-00
	5.25E-02	7.50E-02	1.49E-01	3.76E-01	1.00E-00	3.60E-00	1.00E+01
	5.68E-02	8.00E-02	1.59E-01	3.92E-01	1.13E-00	4.00E-00	1.07E+01
	6.00E-02	8.42E-02	1.68E-01	4.10E-01	1.28E-00	4.40E-00	1.13E+01
2075.	6.31E-02	8.81E-02	1.76E-01	4.31E-01	1.45E-00	4.81E-00	1.19E+01
2080.	6.67E-02	9.25E-02	1.84E-01	4.56E-01	1.63E-00	5.23E-00	1.25E+01
2085.	7.06E-02	1.01E-01	2.06E-01	4.81E-01	1.84E-00	5.66E-00	1.31E+01
2090.	7.42E-02	1.19E-01	2.56E-01	5.07E-01	2.06E-00	6.10E-00	1.37E+01
2095.	7.71E-02	1.42E-01	3.23E-01	5.47E-01	2.30E-00	6.55E-00	1.42E+01
2100.	7.89E-02	1.67E-01	2.95E-01	6.00E-01	2.54E-00	7.00E-00	1.47E+01
2105.	8.01E-02	1.87E-01	4.58E-01	6.71E-01	2.78E-00	7.45E-00	1.52E+01
2110.	8.13E-02	2.01E-01	5.00E-01	7.60E-01	3.04E-00	7.90E-00	1.57E+01
2115.	8.25E-02	2.10E-01	5.29E-01	8.62E-01	3.30E-00	8.33E-00	1.62E+01
2120.	8.40E-02	2.19E-01	5.58E-01	9.73E-01	3.59E-00	8.76E-00	1.66E+01
2125.	8.54E-02		5.86E-01	1.09E-00	3.89E-00	9.18E-00	1.70E+01
2130.	8.68E-02		6.12E-01	1.24E-00	4.19E-00	9.60E-00	1.75E+01
2135.	9.82E-02		6.38E-01	1.41E-00	4.50E-00	1.00E+01	1.78E+01
2140.	8.97E-02		6.66E-01	1.60E-00	4.85E-00	1.04E+01	1.82E+01
2145.	9.12E-02		6.99E-01	1.80E-00	5.22E-00	1.08E+01	1.86E+01
2150. 2155. 2160. 2165. 2170.	9.28E-02 9.44E-02 9.60E-02 9.74E-02 9.87E-02		7.40E-01 7.96E-01 8.77E-01 9.81E-01 1.11E-00		5.63E-00 6.06E-00 6.48E-00 6.91E-00 7.35E-00	1.12E+01 1.16E+01 1.20E+01 1.25E+01 1.30E+01	1.90E+01 1.94E+01 1.98E+01 2.01E+01 2.03E+01
2175.	1.00E-01	3.90E-01		3.51E-00	7.80E-00	1.34E+01	2.04E+01
2180.	1.02E-01	4.22E-01		3.91E-00	8.26E-00	1.39E+01	2.05E+01
2185.	1.06E-01	4.54E-01		4.35E-00	8.75E-00	1.43E+01	2.05E+01
2190.	1.12E-01	4.90E-01		4.81E-00	9.27E-00	1.47E+01	2.06E+01
2195.	1.20E-01	5.31E-01		5.30E-00	9.86E-00	1.51E+01	2.08E+01
2200 • 2205 • 2210 • 2215 • 2220 •	1.29E-01 1.40E-01 1.52E-01 1.67E-01 1.87E-01	5.81E-01 6.37E-01 6.97E-01 7.64E-01 8.40E-01	2.31E-00 2.54E-00	6.90E-00 7.46E-00	1.05E+01 1.12E+01 1.19E+01 1.26E+01 1.33E+01	1.56E+01 1.60E+01 1.64E+01 1.68E+01 1.72E+01	2.13E+01 2.17E+01 2.21E+01



### COZK

WAVE			TE	MPERATURE			
NUMBER				REES KELVI			
(1/CM)	300.	600.	900.	1200.	1500.	1800.	2100•
2225. 2230. 2235. 2240. 2245.	2.17E-01 2.65E-01 3.34E-01 4.31E-01 5.51E-01	9.40E-01 1.08E-00 1.26E-00 1.48E-00 1.75E-00	3.31E-00 3.65E-00 4.03E-00 4.43E-00 4.84E-00	8.57E-00 9.12E-00 9.66E-00 1.01E+01 1.06E+01	1.40E+01 1.45E+01 1.50E+01 1.55E+01 1.58E+01	1.77E+01 1.81E+01 1.86E+01 1.89E+01 1.90E+01	2.30E+01 2.35E+01 2.39E+01 2.41E+01 2.38E+01
2250 • 2255 • 2260 • 2265 • 2270 •	6.93E-01 8.50E-01 1.01E-00 1.19E-00 .38E-00	2.04E-00 2.34E-00 2.65E-00 2.93E-00 3.20E-00	5.63E-00 5.99E-00 6.29E-00	1.11E+01 1.15E+01 1.18E+01 1.21E+01 1.24E+01	1.59E+01 1.60E+01 1.59E+01 1.58E+01 1.57E+01	1.89E+01 1.87E+01 1.85E+01 1.82E+01 1.78E+01	2.33E+01 2.26E+01 2.17E+01 2.07E+01 1.96E+01
2275. 2280. 2285. 2290. 2295.	1.58E-00 1.81E-00 2.12E-00 2.57E-00 3.18E-00	3.46E-00 3.75E-00 4.05E-00 4.37E-00 4.78E-00	6.79E-00 7.06E-00 7.39E-00 7.80E-00 8.30E-00	1.26E+01 1.27E+01 1.28E+01 1.28E+01 1.28E+01	1.54E+01 1.52E+01 1.50E+01 1.48E+01 1.45E+01	1.72E+01 1.67E+01 1.62E+01 1.58E+01 1.53E+01	1.83E+01 1.74E+01 1.65E+01 1.59E+01 1.53E+01
2300 • 2305 • 2310 • 2315 • 2320 •	4.01E-00 5.04E-00 6.26E-00 7.67E-00 9.31E-00	5.38E-00 6.22E-00 7.39E-00 8.71E-00 1.00E+01	8.90E-00 9.55E-00 1.02E+01 1.07E+01 1.12E+01	1.27E+01 1.25E+01 1.23E+01 1.20E+01 1.16E+01	1.42E+01 1.37E+01 1.32E+01 1.27E+01 1.22E+01	1.47E+01 1.42E+01 1.34E+01 1.28E+01 1.21E+01	1.45E+01 1.38E+01 1.30E+01 1.24E+01 1.15E+01
2325. 2330. 2335. 2340. 2345.	1.09E+01 1.22E+01 1.34E+01 1.44E+01 1.53E+01	1.10E+01 1.14E+01 1.13E+01 1.10E+01 1.06E+01		1.13E+01 1.08E+01 1.03E+01 9.85E-00 9.16E-00		1.14E+01 1.07E+01 9.86E-00 9.22E-00 8.36E-00	1.08E+01 1.00E+01 9.13E-00 8.52E-00 7.81E-00
2350. 2355. 2360. 2365. 2370.	1.59E+01 1.52E+01 1.30E+01 1.03E+01 6.97E-00	1.06E+01 9.45E-00 8.01E+00 7.27E-00 6.43E-00		6.15E-00	8.15E-00 7.36E-00 6.33E-00 5.56E-00 4.58E-00	7.61E-00 6.85E-00 5.77E-00 5.05E-00 4.12E-00	7.22E-00 6.50E-00 5.45E-00 4.66E-00 3.67E-00
2375. 2380. 2385. 2390. 2395.	4.45E-00 2.65E-00 1.51E-00 9.98E-01 6.25E-01	4.95E-00 3.50E-00 2.28E-00 1.40E+00 7.59E-01	5.01E-00 4.10E-00 3.00E-00 1.90E-00 1.20E-00	4.10E-00 2.80E-00 2.05E-00 1.40E-00 1.09E-00	3.76E-00 2.30E-00 1.70E-00 1.20E-00 9.00E-01	3.36E-00 1.90E-00 1.27E-00 1.00E-00 8.65E-01	2.97E-00 1.60E-00 1.15E-00 9.00E-01 8.40E-01
2400.	4.03E-01	5.51E-01	6.63E-01	8.002-01	8.00E-01	8.10E-01	8.00E-01



#### APPENDIX H

## Carbon Dioxide Emission Data for the range 500-800 cm -1.

This appendix presents the Carbon Dioxide Emission data as contained in the report:

Ludwig, C.R., "Tables of Carbon Dioxide Absorption Coefficients", obtained from private communications with Dr. Ludwig when he was at G.D.

The equations utilizing this data are presented in Section 3.2.



005	
CFI	
IENTO	
2	
COEFF	
ZOI	
SORPT	
m	

BAND
FUNDAMENTAL
MICRON
S

/CM	MICRON	300 K	¥ 009	1200 K	1500 K	1800 K	2400 K
500	20.00	00	000	OCOCE CO	.1050E-01	.3000E-01	.8800E-01
505	19.80	.0000E 00	. ODDOCE OD	.0000E 00	.1800E-01	.4900E-01	.8000E-01
510	19.60	.0000E 00	.0000E 00	. GUOGE CO	.3000E-01	.5400E-J1	.7400E-01
-	19.41	.0000E 00	OCCOP OC	.0000E GU	.3000E-01	.5600E-01	. 3900E-01
520	19.23	.0000E 0U	.0000E 00	.0000E 00	.3300E-01	.6900E-01	.9900E-01
525	19.04	00000E 00	.0000E 00	.8800E-02	.3800E-01	.7200E-01	.9700E-01
530	18.86	• 0000E 00	.00 30C00.	.1100E-01	.5300E-01	.9500E-01	.1240E 00
535	18.69	CO 30000.	.0000E 00	.2850E-01	.6300E-01	.9900E-01	.1400E 00
540	18.51	00 30000°	OCCOSE OC	.3300E-01	.6800E-01	.1030E 00	.1340E 00
545	18.34	-0000E 00	.0000E 00	.4500E-01	.9200E-01	•1380E 00	.1760E 00
550	18.18	• 0000E 00	• 00000E 00	.49COE-01	.9700E-01	.1480E 00	.1910E 00
555	18.01	.0000E 00	.000E 00	.4900E-01	•1200E 30	. 1480E 00	.2470E 00
260	17.85	00 B0000.	OCCCE OC	.4800E-01	•126UE 00	.2010E 00	.2410E 00
565	17.69	.0000E 00	OCCOE OO	.8200E-01	.1980E 00	.272E 00	.2650E 00
570	17.54	•0000E 00	.7500E-02	.6900E-01	.14COE 00	.2250E 00	.3400E 00
575	17.39	OC BOOOD.	.2050E-01	.8200E-01	.1450E 00	.2360E 00	.5300E 00
580	17.24	.0000E 00	.3550E-01	.1170E 00	.1930E 00	.2950E 00	.5500E 00
585	17.09	.1570E-01	.5200E-01	.1700E 00	.2350E 00	.3050E JO	.4100E 00
290	16.94	.1500E-01	.8800E-01	.2700E 0C	.3300E 0C	.4400E 00	.5200E 00
269	16.80	.5100E-01	•1300E 00	.4000E 00	.530CE 00	.5600E 00	.5400E 00
009	16.66	.1200E 00	.1650E 00	•2750E 00	.3200E 00	.4200E CO	.5600E 00
605	16.52	.8800E-01	.1900E 00	.430CE 00	.5400E 00	.6200E 00	.6800E 00
610	16.39	.1100E 00	.3500E 00	.7100E 00	.7600E 00	.7600E 00	.6900E 00
615	16.26	.1800E 00	.4700E 00	.9200E 00	.9700E 00	.9100E 00	.6700E 00
620	16.12	.9700E-01	.2650E 00	.6100E 00	.7200E 00	.7800E 00	.7300E 00
625	16.00	.1750E 00	.38COE 00	.7200E 00	.790UE 00	.8300F JO	.8400F 00



00 FUNDAMENTAL BAND 600 K 1200 K 1200 K 1200 K 1200 K 1200 K 11000E 00		ABSORPTION K (PER		COEFFICIENTS OF	CO2 (CONT.D	ĵą.		
300 K 3700E		S MICR	ON FUNDA	AL				
3450E 00 8400E 00 1070E 01 1150E 01 115	MICRON	300 K	00	200		0	2400 K	
74		0	400E 0	200E O	9600E 0	800	0	00
9400E 00 1030E 01 1150E 01 1150E 01 1360E 01 1360E 01 1360E 01 1360E 01 1460E 01 1360E 01 1360E 01 1360E 01 1360E 01 1360E 01 1770E 01 1960E 01 1720E 01 1560E 01 1720E 01 172	1.	0	8400E 0	070E	1100E	111	1 .1060E	01
50	0	0	1 ~ 30E	SOE	1150E	11	1 .1180E	01
38	5	0 3096	770E 0		1360E	3	1 .1390E	0
2820E 01 .2480E 01 .2000E 01 .1900E 01 .1760E 01 .2420E 01 .2340E 01 .3700E 01 .1760E 01 .1760E 01 .3700E 01 .3700E 01 .2500E 01 .3500E 01 .2600E 01 .2600E 01 .3500E 01 .2600E	3	50E	2820E		1720E	.1560E 0	1 .1480E	10
2540E 01 .2340E 01 .1840E 01 .1760E 01 .174  4550E 02 .8650E 01 .3700E 01 .2600E 01 .1950  3500E 01 .3100E 01 .3300E 01 .2900E 01 .350  2400E 01 .2600E 01 .2000E 01 .2000E 01 .1960E 01 .100  2400E 01 .2500E 01 .2000E 01 .2000E 01 .1960E 01 .100  1040E 01 .2500E 01 .2180E 01 .2200E 01 .140  1040E 01 .1350E 01 .2180E 01 .1720E 01 .1480E 01 .1650  2500E 00 .7800E 00 .1400E 01 .1330E 01 .1470E 01	2	SOE	480E	3000	300E	86	1 .2050E	010
1420E 02 .86600E 01 .3700E 01 .2600E 01 .350  45500E 01 .3100E 01 .3300E 01 .2900E 01 .350  2400E 01 .26600E 01 .2000E 01 .2900E 01 .180  2400E 01 .26600E 01 .2000E 01 .2900E 01 .180  10400E 01 .2500E 01 .2180E 01 .1720E 01 .170  10400E 01 .1280E 01 .1720E 01 .1470E 01 .148  55500E 00 .1280E 01 .1280E 01 .1470E 01 .148  55500E 00 .7800E 00 .1400E 01 .1330E 01 .1350E 01 .135	-	540E	340E 0	840E	760E	1	1 . CC30E	01
3600E 01 .5700E 01 .5800E 01 .5200E 01 .350 3100E 01 .2600E 01 .2000E 01 .1800E 01 .2000E 01 .1700E 01 .1700E 01 .1700E 01 .1280E 01 .1700E 01 .1280E 01 .1280E 01 .1280E 01 .1330E 01 .13	0	420E 0	600E 0	700E	2600E	096	1 .1420E	010
3500E 01 .3100E 01 .3300E 01 .2900E 01 .1960E 01 .3100E 01 .2600E 01 .1650E 01 .1350E 01 .1280E 01 .1720E 01 .1650E 01 .1280E 01 .1280E 01 .1280E 01 .1280E 01 .1330E	0	SOOE	700E 0	BOOE	5200E	50	1 .4200E	0
3100E 01 .2660E 01 .2000E 01 .1960E 01 .180  2400E 01 .2500E 01 .2300E 01 .2200E 01 .170  1040E 01 .1350E 01 .2180E 01 .1720E 01 .184  55500E 00 .1280E 01 .1720E 01 .1470E 01 .148  1360E 01 .1280E 01 .1280E 01 .1330E 01 .1380E	0	<b>600E</b>	100E 0	300E	3006	050	1 .2000E	0
2400E 01 .2500E 01 .2300E 01 .2200E 01 .1040E 01 .1350E 01 .1720E 01 .1844	1.	100E	600E	OOOE	3096	800	1 .2100E	01
1820E 01 .2000E 01 .2180E 01 .2050E 01 .184 1040E 01 .1350E 01 .1720E 01 .1720E 01 .165 8 .1360E 01 .1280E 01 .1720E 01 .1720E 01 .165 8 .2100E 00 .1280E 01 .1280E 01 .1330E 01 .138 8 .2100E 00 .7800E 00 .1400E 01 .1350E 01 .137 9 .000E 00 .1060E 01 .1400E 01 .1450E 01 .137 9 .6400E 01 .2100E 00 .8600E 01 .1600E 01 .1550E 01 .155 9 .6400E 01 .2100E 00 .5600E 01 .1600E 01 .155 9 .6400E 01 .2100E 00 .5600E 00 .7200E 00 .860 1 .3300E 01 .2100E 00 .3900E 00 .5200E 00 .820 1 .3300E 01 .1400E 00 .3900E 00 .5300E 00 .520 1 .750E 01 .2100E 00 .3900E 00 .3350E 00 .380 1 .750E 01 .2200E 01 .2200E 00 .3350E 00 .345	3	300t	SOOE	2300E	2200E	70	1 .1940E	10
\$ 1040E 01 .1350E 01 .1720E 01 .1720E 01 .165  \$ 5500E 00 .1200E 01 .1280E 01 .1470E 01 .148  \$ 1360E 01 .1280E 01 .1280E 01 .1350E 01 .138  \$ 2100E 00 .7800E 00 .1400E 01 .1350E 01 .137  \$ 9000E 00 .7800E 00 .1400E 01 .1460E 01 .147  \$ 9000E 00 .1060E 01 .1400E 01 .1500E 01 .155  \$ 6400E-01 .2100E 00 .5600E 00 .7200E 01 .155  \$ 6400E-01 .2100E 00 .5600E 00 .6700E 00 .860  \$ 6800E-01 .2100E 00 .5400E 00 .5200E 01 .165  \$ 3300E-01 .7800E-01 .2700E 00 .5300E 00 .165  \$ 1750E-01 .4500E-01 .2250E 00 .3350E 00 .380  \$ 4500E-02 .300E-01 .1800E 00 .2400E 00 .345	4	820E	3000	2180E	2050E	.1840E J	1 .1300E	01
28 .5500E 00 .1200E 01 .1430E 01 .1470E 01 .14889E 01 .1360E 01 .1370E 01 .1470E 01 .1480E 01 .	14.38	040E 0	350E 0	720E	1720E	0	1 .1300E	010
18	.2	SOOF O	200E 0	430E	470E	4	1 .1250E	10
98 .2100E 00 .7800E 00 .1270E 01 .1330E 01 .137 98 .1900E 00 .7800E 00 .1400E 01 .1460E 01 .147 98 .9000E 00 .1060E 01 .1400E 01 .1500E 01 .155 779 .7200E-01 .3000E 00 .8000E 00 .1000E 01 .155 69 .6400E-01 .2100E 00 .5600E 00 .7200E 01 .115 60 .6800E-01 .2100E 00 .5400E 00 .6700E 00 .820 91 .3300E-01 .2100E 00 .5400E 00 .520 92 .3300E-01 .2700E 00 .5200E 00 .520 93 .2300E-01 .2800E 00 .5300E 00 .520 94 .3000E-01 .2800E 00 .3350E 00 .520 95 .4500E-01 .1480E 00 .2400E 00 .345	-	360E 0	90E 0	280E	350E	38	1 .1340E	01
98 .1900E 00 .7800E 00 .1400E 01 .1450E 01 .1470 98 .9000E 00 .1060E 01 .1400E 01 .1500E 01 .1550 79 .7200E-01 .3000E 00 .8000E 00 .1000E 01 .1150 69 .6400E-01 .2100E 00 .5600E 00 .7200E 00 .8600 50 .6800E-01 .2100E 00 .5400E 00 .6700E 00 .7900 51 .6900E-01 .2100E 00 .5400E 00 .6700E 00 .1650 33 .2300E-01 .1400E 00 .3900E 00 .5300E 00 .1650 24 .3000E-01 .7800E-01 .2700E 00 .4100E 00 .5600 15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500E 07 .4500E 07 .4500E 00 .3450E	0	0	BOOE 0	1.1	330E	3	1 .1320E	010
.98 .9000E 00 .1060E 01 .1400E 01 .1500E 01 .1550 .79 .7200E-01 .3000E 00 .8000E 00 .1000E 01 .1150 .69 .6400E-01 .2100E 00 .5600E 00 .7200E 00 .8600 .50 .6800E-01 .2100E 00 .5400E 00 .6700E 00 .7900 .51 .6900E-01 .2100E 00 .5400E 00 .6700E 00 .7900 .53 .2300E-01 .1400E 00 .3900E 00 .5300E 00 .1650 .33 .2300E-01 .7800E-01 .2700E 00 .4100E 00 .5600] .24 .3000E-01 .8600E-01 .2800E 00 .4000E 00 .5600] .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .4500E-02 .3000E-01 .1480E 00 .2400E 00 .3450	0	900E 0	BOOE 0	400F	<b>6</b> ∪E	47	1 .1440E	10
.79 .7200E-01 .3000E 00 .8000E 00 .1000E 01 .1150 .69 .6400E-01 .2100E 00 .5600E 00 .7200E 00 .8600 .50 .6800E-01 .2100E 00 .5400E 00 .6700E 00 .7900 .51 .6900E-01 .2100E 00 .5400E 00 .6700E 00 .7900 .33 .2300E-01 .1400E 00 .3900E 00 .5300E 00 .1650 .33 .2300E-01 .7800E-01 .2700E 00 .4100E 00 .5600 .24 .3000E-01 .8600E-01 .2800E 00 .4000E 00 .5200 .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1480E 00 .2400E 00 .3450	æ	000E 0	060E 0	OOE	COE	35	1 .1340E	0
.69 .6400E-01 .21.0E 00 .5600E 00 .7200E 00 .8600 .51 .6900E-01 .21.0E .00 .5300E 00 .6700E 00 .7900 .51 .6900E-01 .2100E .00 .5400E 00 .6700E 00 .7900 .33 .2300E-01 .1400E .00 .3900E 00 .5300E 00 .1650 .24 .3000E-01 .7800E-01 .2700E 00 .4100E 00 .5600 .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1800E 00 .2400E 00 .3450	1	200E-	OCOE O	000E 0	3000	50	1 .1260E	01
.60 .6800E-01 .2130E.00 .5300E 00 .670UE 00 .7900 .51 .6900E-01 .2100E 00 .5400E 03 .6900E 00 .8200 .33 .2300E-01 .1400E 00 .3900E 00 .5300E 00 .1650 .24 .3000E-01 .7800E-01 .2700E 00 .4100E 00 .5600 .24 .3000E-01 .8600E-01 .2800E 30 .4000E 00 .5200 .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1800E 00 .2400E 00 .3450	9	400E-	1 JOE 0	600E 0	SOUE O	900	0 .1020E	0
.51 .6900E-01 .2100E 00 .5400E 00 .6900E 00 .8200 .33 .2300E-01 .1400E 00 .3900E 00 .5300E 00 .1650 .24 .3000E-01 .7800E-01 .2700E 00 .4100E 00 .5600 .15 .1750E-01 .8600E-01 .2800E 00 .4000E 00 .5200 .07 .1050E-01 .4500E-01 .1800E 00 .2400E 00 .3800 .96 .4500E-02 .3000E-01 .1800E 00 .2400E 00 .3450	9	800E-	1 00E, 0	300E 0	670UE 0	06	0 .1010E	10
.42 .3300E-01 .1400E 00 .3900E 00 .5300E 00 .1650 .33 .2300E-01 .7800E-01 .2700E 00 .4100E 00 .5600 .24 .3000E-01 .8600E-01 .2800E 00 .4000E 00 .5200 .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1800E 00 .2400E 00 .3450	5	-3006	100E 0	400E 0	6900E 0	20	0 .9100E	00
.33 .2300E-01 .7800E-01 .2700E 00 .4100E 00 .5600 .24 .3000E-01 .8600E-01 .2800E 00 .4000E 00 .5200 .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1800E 00 .2800E 00 .3800 .98 .4500E-02 .3000E-01 .1480E 00 .2400E 00 .3450	4.	300E-	400E 0	900E 0	S300E 0	650	4 .7700E	00
.24 .3000E-01 .8600E-01 .2800E 00 .4000E 00 .5200 .15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1800E 00 .2800E 00 .3800 .98 .4500E-02 .3000E-01 .1480E 00 .2400E 00 .3450	3	300E-	800E-0	700E 0	4100E 0	600	.890	00
.15 .1750E-01 .6200E-01 .2250E 00 .3350E 00 .4500 .07 .1050E-01 .4500E-01 .1800E 00 .2800E 00 .3800 .98 .4500E-02 .3000E-01 .1480E 00 .2400E 00 .3450	5	-3000	600E-0	800E 0	4000E 0	200	0 .7100E	00
.07 .1050E-01 .4500E-01 .1800E 00 .2800E 00 .3800 .98 .4500E-02 .3000E-01 .1480E 00 .2400E 00 .3450	-	750E-	200E-0	250E 0	3350E 0	500	90099 · c	00
.98 .4500E-02 .3000E-01 .1480E 00 .2460E 00 .3450	0	050E-	500E-0	BODE O	280CE O	800	- 6000E	00
	0	500E-0	OCCE	BOE O	4COE O	450	0 .5700E	00



		ABSOR	BSORPTION COEFF	COEFFICIENTS OF	COZ (CONT.D	(0	
		15 MIC X	CRON FUNDAMENTAL	STP)			
1/CM	MICRON	×	0	1200 K	1500 K	1800 K	2400 K
775	12.90	0 30000°	1400E-01	1. 1240E 00	. 2050E 00	50E 0	.4300E 00
780	12.82	CE O	0 .1150E-01	.1100E 00	.1850E 00	.260 E 00	.3750E 00
785	12.73	.0000E 0	0 .1350	.84.0E-01	.1400E 00	.2052E 00	·3350E 00
790	12.65	OE O	0 .4300E-	•	.1200E 00	.1850E 00	
795	12.57	.0000E 00	• 0000E 0	.5400E-01	•1150E 00	.1800E 00	
800	12.50	CO 30000.		.4400E-01	.9500E-01	.1500E 00	.2700E OC
805	12.42	OC BOOOD.	•		.7900E-01	.1250E 00	.2050E 00
810	12.34	.0000E 00		.2500E-01	.650CE-01	.1100E 30	.1780E 00
815	12.26	.0000E	O SCOCOE O	.1800E-01	.6200E-01	.1030E UD	.1530E 00
820	12.19	.0000E 0	0 30000° 0	.3200E-01	.5800E-01	.8600E-01	.1470E 00
825	12.12	.0000E 00	.0000E 0	.8000E-02	.5100E-01	.8700E-01	•1340€ 00
830	12.04	0 300	0000 0	.6000E-	.4800E-01	.8300E-01	.1330E 00
835	11.97	OE O	0 30000 0	.0000E	.4300E-01	.7800E-01	.1180E 00
840	11.90	0 3000	0 30000° 0	• 0000E C	.420CE-01	.7000E-01	.1080E 00
845	11.83	00 B0000.	•	. OUU OE CO	.360CE-01	.6400E-01	.9800E-01
850	11.76	000E 0	O SOCOE O	.0000E	.3500E-01	.6100E-01	.8700E-01
855	11.69	.0000E 00	00.	. OUCOE CO	.3200E-01	.5800e-01	.8600E-01
960	11.62	• 0000E 0	00000	. COUCOE OD	.3300E-01	.5600E-U1	.7500E-01
865	11.56	-0000E OC	C .OUUCE JO	.0000E 00	.3000E-01	.5300E-01	.7500E-01
870	11.49	.0000E 00	0000	. DOOOE OC	.2900E-01	.5300E-01	.8500E-01
875	11.42	.0000E	0 -0000E 00	· CUCOE OU	1	.4700E-01	.9000E-01
880	11.36	.0000E 0	0 .0000E 00	. OUDOE 00	.2200E-01	.4500E-01	.8600E-01



#### APPENDIX I

#### Ludwig emmission model for the CO<sub>2</sub> 1900-2395 cm<sup>-1</sup> band.

The Ludwig model is included in this report as at one time it was under consideration for use in "HIDE". It was found, however, to be slightly inferior to Jackson for plume predictor comparisons and thus was not used.

The transmission equation of Ludwig is defined as:

$$= EXP(-KU/\sqrt{1+KU/4A})$$

$$U = PP_{CO_2} * P * PL * 273/T$$

P = Pressure (atmospheres)

PL = path length

T = temperature OK

A,K from tables in this appendix.

To determine A,K in steps of 5 cm<sup>-1</sup> as required by "HIDE" for this band a third order collocation polynominal was used. In order to interpolate between temperatures, a second order quadratic was passed through the 300, 600, 1200 °K points. Thus, the "HIDE" A,K agree exactly with the Ludwig data at the tabulated values and varies smoothly between them.

The data itself comes from a report by Ludwig, C.R., titled "Table of Carbon Dickide Absorption Coefficients", obtained from private communications with Dr. Ludwig when he was at General Dynamics.

		•
19	£	P١
l	٨	•
1.	-	•

			3000 K	6.923-02	8.943-02	1.144-01	1.447-01	1.812-01	2.259-01	2.815-01	3.504-01	4.352-01	5.372-01	6.558-01	8.004-01	9.665-01	1.159+00	1.427+00	1.662+00	1.958+00	2.299+00	2.802+00	3.171+00	3.651+00	4.180+00	4.881+00	5.474+00	6.125+00	7.315+00
			2400 K	• • • •				-0-		-0-		•0-		1.289-01	1.727-01	_	985-01	3.883-01	5.030-01	7	8.320-01	1.059+00	1.331+00	1.663+00	2.058+00	2.539+00	3.083+00	3.717+00	4.521+00
OF C02		BAND	K 1800 K	•0-			• 0 -	• 0 -	•0-	• 0 -	• 0 -	• 0 -	525-05-0.	305-04-0.	076-04-0.	848-04-0.	098-03-0.	-03-0.	-03-0-	-03-0-	-05-0-	785-02-0.	-02 1.461-01	-02 2.923-01	-02 4.157-01	01 5	-01 8.043-01	-01 1.104+00	-01 1.501+00
COEFFICIENTS	AT STP)	4.3 MICRON FUNDAMENTAL	0 K 1500	-0-	• 0 -	-0-	-0-	•0-	-0-	-0-	• 0 -	•0-	6.525	1.305-	3.076-	•	1.098-	1.712-03-	3.710-03-	5.708-03-0	1.178-02-	1.785-	3.491-02	5.196-02	8.608-02	•		• 43	1-02 5.212-
	(PER CM	MICRON FU	K 1200	0	• 0 -	• 0	•01	•0-	-0-	• • •	•0-	•0-	•0-	• • •	-0-	01	•0-	0-	-01	• 0-	• 0 -	01	-0-	• 0 -	0-	•0-	• 0 -	3.74	7.49
ABSORPTION	¥	4 W•	9 V	0	• 0 -	•0-	• 0	• 0 -	•0-	•0-	• 0 -	• 0 -	• 0 -	• 0 -	•0-	• 0 -	•0-	•0-	• 0 -	• • •	• 0-	•01	-0-	• 0 -	• 0 -	• 0 -	0	•0-	0
			300	0	0-	• 0-	• 0 -	•0-	-0-	• 0-	• 0 -	-0-	-0-	• 0-	•0-	•0-	-0-	•0-	• 0 -	-0-	• 0-	•0-	•0-	• 0-	•0-	• 0-	•0-	•0-	• 0
			MICRON	5.26	5.24	5.21	5.18	5.15	5.13	5.10	5.08	50.5	5.03	5.00	4.98	4.95	4.93	06.4	4.88	4.85	4.83	4.81	4.78	4.76	4.74	4.72	69.4	4.67	4.65
			1 / CM	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	-	2150

/	_	•
79	и	P١
u	Y	
•		•,

	3000 K	7.494+00	7.673+00	8.006+30	8.339+00	8.670+00	+0	9.742+00	1.048+01	1.057+01	1.066+01	1.088+01	1.110+01	1.127+01	1.145+01	1.201+01	1.257+01	1.252+01	1.247+01	1.241+01	1.236+01	1.390+01	1.544+01	1.398+01	1.252+01	1.216+01	1.181+01	1.143+01	1.105+01	1.211+01
â	2400 K	4.898+00	5.276+00	5.722+00	6.169+00	6.652+00	7.130+00	7.724+00	6.313+00	8.829+00	9.344+00	00+018.6	1.040+01	1.090+01	1.140+01	1.200+01	1.261+01	1.294+01	1.336+01	1.366+01	1.396+01	1.479+01	1.562+01	1.525+01	1.489+01	1.483+01	1.477+01	1.462+01	4	1.510+01
COZ (CONT.D	1800 K	1.758+00	2.016+00	2.340+00	2.664+00	3.066+00	3.467+00	3.960+00	4.453+00	5.037+00	5.621+00	6.284+00	6.975+00	7.706+00	8.493+00	8.294+00	1.016+01	1.098+01	1.185+01	1.276+01	1.351+01	1.439+01	1.521+01	1.585+01	1.640+01	1.697+01	1.734+01	1.789+01	1.793+01	1.817+01
0 1	0	6.468-01	7.724-01	9.488-01	1.125+00	1.372+00	1.618+00	1.954+00	2.289+00	2.734+00	3.180+00	3.753+00	4.326+00	5.042+00	5.758+00	6.629+00	7.500+00	8.494+00	9.489+00	1.059+01	1.168+01	1.288+01	1.398+01	1.517+01	1.620+01	1.726+01	1.812+01	1.907+01	1.960+01	2.000+01
COEFFIC R CM AT	-	1.012-01	35	1.807-01	2.388-01	3.134-01	4.081-01	5.274-01	6.765-01	8.611-01	1.088+00	1.364+00	1.702+00	2.110+00	2.606+00	3.191+00	3.883+00	00+069.4	5.614+00	6.679+00	7.846+00	9.179+00	1.058+01	1.213+01	1.368+01	1.533+01	1.689+01	1.842+01	+0	2.092+01
ABSORPTION K (PER	900	0	-0-	-0-	-0-	-0-	•0-	-0-	•0-	3.728-04	7.456-04	1.444-03	2.760-03	5.202-03	9.661-03	1.767-02	3.183-02	5.641-02	9.829-02	1.683-01	2.829-01	4.667-01	7.550-01	1.197+00	1.856+00	2.816+00	4.174+00	.032+	8.490+00	1.162+01
1	300 K	0					-0-		-0-	-0-	-0-	• 0 -	-0-	-0-	•0-	-0-	•0-	• 0-	-0-	3.878-05	7.757-05	.543-	8.058-04	2.464-03	7.260-03	2.056-02	50 80	.45	-602-	8.492-01
	MICRON	4.64		4.62		4.60	4.59	4.58	4.57	4.56	4.55	4.54	4.52	4.51		4.49	4.48	4.47	4.46	4.45	4.44	4.43	4.42	4.42	4.41	4.40	4.39	4.38	4.37	4.36
	1/CM	100	16	2165	2170	2175	2180	00		2195	2200	2205	2210	2215	2220	2225	2230	2235	2240	2245	2250	2255	2260	2265	2270	27	2280	28	53	2295



		3000 K	1.317+01	1.223+01	1.129+01	1.064+01	9.987+00	9.291+00	00+565.0	8.926+00	9.257+00	8.216+00	7.175+00	6.247+00	5.319+00	4.436+00	3.553+00	2.653+00	1.753+00	1.263+00	7.741-01	-0-
(a		2400 K	1.574+01	1.434+01	1.474+01	1.594+01	1.384+01	1.328+01	1.271+01	1.202+01	1.308+01	1.039+01	1.113+01	1.177+01	9.080+00	8.851+00	6.507+00	6.027+00	3.566+00	3.568+00	1.585+00	1.502+00-0
CO2 (CONT.D	0	1800 K	1.858+01	1.809+01	1.849+01	1.849+01	1.815+01	1.775+01	1.706+01	1.745+01	1.785+01	1.654+01	1.680+01	1.706+01	1.556+01	1.464+01	1.223+01	1.066+01	8.962+00	6.427+00	3.314+00	2.496+00
0	NTAL BAND	1500 K	2.042+01	2.038+01	2.092+01	2.048+01	2.072+01	2.034+01	2.039+01	2.053+01	2.116+01	2.033+01	2.028+01	1.989+01	2.047+01	1.939+01	1.699+01	1.446+01	1.089+01	8.434+00	4.217+00	• 0.
PTION COEFFICIENT K (PER CM AT STP)	MICRON FUNDAMENTAL	1200 K	2.209+01	2.241+01	2.329+01	2.300+01	2.327+01	2.263+01	4.262+01	2.275+01	2.238+01	2.308+01	2.282+01	2.523+01	2.620+01	2.546+01	2.319+01	1,960+01	1.508+01	1.063+01	2.809+00	2.817+00-0.
ABSORPTION COEFFICIENTS K (PER CM AT STP)	4.3 MICRO	600 K	1.550+01	1.989+01	2.482+01	2.934+01	3.349+01	3.552+01	3.616+01	3.401+01	2.931+01	2.640+01	2.082+01	3.627+01	4.701+01	5.033+01	4.548+01	3,436+01	2.096+01	9.634+00	2.886+00	3.776-01
4		300 K	1.896+00	3.985+00	7.844+00	1.434+01	2.407+01	3,660+01	4.955+01	5.733+01	5.428+01	3.709+01	1.138+01	5.283+01	7.796+01	7.550+01	5.149+01	2.410+01	7.111100	1.123+00	6.789-02	6.472-04
		MICRON	4.35	4.34	4.33	4.32	4.31	4.30	62.4	4.28	4.27	4.26	4.26	4.25	4.24	4.23	4.22	4.21	4.20	4.19	4.18	4.18
		1/CM	2300	2305	2310	2315	2320	2325	2330	2335	2340	2345	2350	2355	2360	2365	2370	2375	2380	2385	2390	2395



			3000 K	970E	38E	770E	46	36	71E	366	ш	385	24E	9	7E	270E	366E	.3366E 02	753E	774E	828E	BE	272E	3230E 02	.3440E 04	740E	20	17E	O L
			ν Σ	ш	OE 00		ш	ш	ш	u	00 30	ш		u		ш		ш		ш	4E 02		ш	·IJ	5E 04	0	7E 02	C J	7E 02
	۵		640	.000	000	0000	.000	000.	000	000.	000.	.000	.000	.568	.658	.751	.840	.949	.107	.122	.141	.165	.175	.190	.401	28	-	36	.302
205	51		¥	0	0	0	0	0	0	0	0	0	0	0	O	0	0	0	0	0	0	0	0	0	0	0:		0	0.2
L O	SZDXD) AT	L BAND	1800	000	00	00	-0000e		000	000	0	000	)	000	0	00		000	000	000	000	0	000			02	06	.9202E	65
CIENTS	SZD	ATVI	¥		0	00		00		0	0		000	0	0	0		0	00	00	0	0	00	3	00	000	00	0	01
OEFFI	ALPHA X	FUNDAMENTAL	1200	00	00	0	000	• 0000E	00	00	0	00	000	00	· JOSOE	00	000	00	000	00	00	0	0	00	• 0000E	- C0000E	-0000E	• 0000E	8
U	×	Z	Y	0	00	0	00	00	0	00	00	00	00	00	20	00	00	00	00	00	00	0	00	0	00	00	0	00	0
SORPTION	SORT (4	.3 MICR	2009	000	-0000E	000	00	000	000	000	00	000	000	0	0	000	-0000E	000	000	000	30000°	000	000	000	000	)	000	00	0
AB		4		0	00		00	00	00	00	00	00	00	00	0						00			0			00		00
			300 K	00	-0000E	0	00	0	000	000	000	00	.0000E	000	-0000E	00	000	000	000	000	0	000	000	-0000E	000	00	00	000	0
			MICRON	2	5.23	2	-	-	-	-	0	0	0	0	6	6		06.4	å		4.83			4.76	4.73	4.71	4.69	4.67	4.65
			1/CM	1900	-	N	1930	4	10	9	1	0	66	00	01	02	03	0	05	90	07	08	60	0	-	12	2130	14	2150



# APPENDIX J Scattering Function

This section will attempt to present and explain the results of a study to determine the proper form of the scattering function to be used in Hide.

Most references on the subject give the form of the scattering function to be:

$$T_g = EXP (-AR \lambda^{-B})$$

where:

 $\lambda$  is wavelength in microns

A & B are constants dependent on meterological conditions such as visual range and scattering particle size and concentration.

R is range.

Rayleigh scattering occurs when the particle size is much smaller than the radiation wavelength, and B=4. When B=2, the particle size equals the wavelength and is called mie scattering. Finally non selective scattering occurs for large particles when B=0. Since the size distribution for the important scattering particles lie in the infrared, i.e. Haze and fog are distributed around 3-5  $\mu$  and cumulus water droplets range from about 1-15  $\mu$ , this becomes a formidable problem and can only be solved exactly by knowing the conditions on a given day over the entire path. These conditions are hardly ever known so one must use what he believes to be a typical real atmosphere, derive the scattering function and hope the ensuing errors for a given day are minimal. This then was the approach used in the Hide model, that is an "exact" scattering function was derived for each of several real atmospheres and the average values of the resulting A's and B's were used to define the "typical atmosphere".



The "Hide" real atmosphere was defined by Yates & Taylor in their work for N.R.L. in Washington, D.C. This project concerned itself with making accurate measurements of transmission over varied weather conditions. Data was then taken by Westinghouse off these curves at selected wavelengths falling within each of the eight major windows. This information was then fed into a computer program which upon dividing by the Wyatt Plass and Struel transmission was able to come up with a value of scattering at each wavelength. These scattering values were then used to perform a least squares curve fit to the function:

$$T_s = EXP(-AR \lambda^{-B})$$

The results of this exercise are shown in figure 1. The meterological conditions under which Yates and Taylor recorded their measurements for each plate are given therein as:

RM = range in KM

RV = visual range in KM

Temp = ambient temp (OF)

RH = relative humidity

The data shown under the column headings "WV", "Trans", "SCAT" are the wavelength at which the data was transcribed, the transmission read off the curves, and the calculated value of scattering respectively. A and B are given as the results of a curve fit to the presumed scattering function:

$$T_a = EXP(-AR \lambda^{-B}),$$

and the error shown is the sum of the squares of the difference between the actual and calculated values of scattering. An attempt was then



carried out to determine whether or not A & B were corallated to temperature, relative humidity, absolute humidity, and visual range but no significant results were obtained. More data and a rigorous statistical analysis possibly would show some relationship but time did not allow and it is recommended that this be done in the future.

The average value of B is approximately 1 which determines the wavelength dependence of the scattering function. Since the value of A depends on B it would not be fitting to use an average value of A as typical. Instead since at .55  $\mu$  all the transmission is considered to be due to scattering and is related to visual range, a known quantity is a given day, A was adjusted to given an exact fit at this wavelength.

Hence the scattering function used in the Hide model is

$$T_s = EXP(-A \lambda^{-1})$$

where A = f (visual range).

The Yates and Taylor data is shown in Appendix D with the Hide transmission plotted in a heavy line over it for comparison. The top figure on each page is the optimum scattering function using the individual A & B's of figure 1 whereas the bottom figure is plotted with the Hide transmission. Using this as an error measure the Hide general function works fairly good.

-	-	•
		0
v	м	а
	Ý	Ŵ

.50300 84.000 RH = 66.000	770	.68100 53.000 RH = 41.000	= 0289	2.15200 87.000 RM = 50.000	.784
.16900	B = .9020 Error = 044		B = .9982 Error = 0289	.4980u Terro = 97.57	610 Error = .7841
60 1.54003 87, = 23.462	A = .1026 B =	10 4.55000 NV = 51.354	A = .0420 B =	0 8.5errou 87.5 16.250	A = .096 B = 1.610
176.00mPu 5.501 KV		<i>c</i> 0	. 4017 . 4600; (712) A . 8131 1,0006;	<u> </u>	
5, P=K.5 2.230FC 400 40 = 70.35	. 5.490 . 5.490 . 5.490 . 5.490 . 5.400 . 5.400	5-78098 5-78098 290 - AV = 174745 -2300		.026 -75 .026 -7. .026 -7. .026 -7.	7.200
		PLATE 30. 5 0041.1111.5 155 =	1.3500 1.5400 2.6200 3.1400 4.6000	4	

51.000		43.000		000.	
.10500 64.000 RH =	Error = .0524	.46400 68.030 RH =	Error = ,1168	е на 000°	Error = .3220
.16900 4 TEMP =	B = .8390	.49300	B = 1.078 Er	.84900	B = .4750
00 1.54000 RV = 00.324	A = .0476	W 4.55000	A = .0298 B	10 3.62900 RV = 121.537	A = .0258
-	5047 .7000 .7000 .720 .720 .720 .0000 1.0000	520.10J00 16.250 RV 9CAT • 436J • 5647	.7127 1.0000 1.0000 1.0000	0	. 17027 . 7022 . 7022 . 1050 . 10000 . 1050
0.0001 0.0000 700 .01 =	72.75 7.00 7.75 7.75 7.75 7.75 7.75 7.75 7	+=16.25 14.10000 430 W = TRAUS -4500 55.00	. 55900 . 7590 . 3700 . 5700	0.70	
200 NUTTILES 200 ETSS = TSS =	38 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PLATE 10. 6 90AMFITIES 105 =	2.000c 3.000c 4.600c	-	1.5560 1.5560 2.7500 3.8400 4.5600 8.6300

100.000		82.000		73.000	034					
.73000 43.000 RH =	Error = .4069	1.27000 74.000 RH =	Error = .8494	.66200 78.000 PH =	58 Error = .034					
.8490u 7 TEMP =	B = 9146 Erro	• 49806 8 TEMP =	B = 1.436	.14900 1 TEND =	= .0881 B = 1.558					
E 3.62000 NY = 81.597	A = .0300 B	30 4.55000 RV = 27.608	A = .0600	0 1.54000	" ₩					
KM ALTITUD 413.7000 57.700 50AT .2650 .4040 .5284		520.005( 16.250 CCAT .1999 .3883	1.000 1.000 .0132 1.0000	176.u056 5.500 5.641	. \$894 . 6784 . 8174 1.0000 1.0000					
9 RE27.7 10 20.00000 .265 KW = TPARS .2050 .3900 .3100 .5400	.4300 .5500 .2700	7 F=15.25 27.70006 .109	4500 4606 5100 2000	7 .755.5 0.40000 .360 .71 = TRANIS .3000	5300 5500 7200 3000 55000					
6JANTITIES 1.55 = EV 1.0550 1.0550 1.6900	2.2800 3.8400 4.6000 8.8300	ADANTITLS QUANTITLS TSS = .5500 1.0550	1.6300 2.2360 3.8400 4.6000		1.755c 1.75cc 1.75cc 2.78cc 3.74cc 4.50cc					

	47.000												48.000									
.16900 .46800	24.802 TEMP = 34.500 RH =							9174 Error = .0672					TCMP = 40.500 RH =									7613 Error = .2671
-								A = .0993 B = .9174				4.55000	30.498									A = .0680 B = .7613
176.000	5.500 RV =	1735	0924.	.5312	. 5024	.6669	+85a+	+69a.	1.0000	1.0000			-	CCAL	. 2000	.2522.	0961	.4061	+000m.	.7333	1.0000	+7824·
35 R=5.5 1.37090	= 12 024.	TRAMS	0024.	.5.500	.5000	0009.	. AZ00	.8000	.7000	.8300	59 P=16.25	5.20000	= 11 0n2.	TRAMS	.2000	.2500	.3900	0000	0004.	0009.	0004	.5000
QUANTITIES 1.57090	155 =	7"	.5500	1,0550	1.2500	1.6900	2.2800	3.8400	4.6000	8.8600	P_ATE 110. 47	GUANTITIES 5.2000	155 =	7.15	.5500	1.0550	1.2500	1.6900	2.2800	3.3400	0000° h	0088.4

Fig. 1 (cont.)